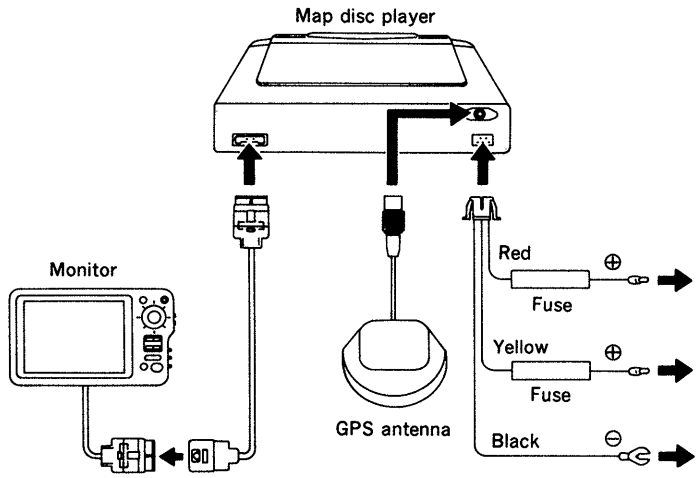
NVX-F160

SERVICE MANUAL

US Model
French Model



• This set consists of the following units.

CD ROM	NVX-F160
ANTENNA	VCA-23 or VCA-24
REMOTE COMMANDER	RM-X52
MONITOR	XVM-58

Model Name Using Similar Mechanism	CDX-600DSP
CD Mechanism Name	MG-205X-130
Optical Pick-Up Name	KSS-313A

SPECIFICATIONS

Main Unit

General

Operating temperatures
−10°C to +50°C (14°F to 122°F)
Power source DC 12V car battery (negative ground)
Current drain approx. 1.6A

GPS receiver section

Reception frequency
1,575.42MHz (C/A code)
Reception system
parallel 8 channels
(simultaneously receivable of 8 satellites)
Reception sensitivity
−130 dBm
Positioning renewal time
approx. 1 second
Input terminal GPS antenna unit connecting terminal
Monitor connector

Map disc player section

Format NAVIKEN standard format
Laser Diode Properties
Material GaAlAs
Wavelength 780 nm
Emission duration Continuous
Laser output power Less than 44.6μW*

*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

Monitor Unit

Type LCD color monitor
Display Transparent TN LCD panel
System TFT active matrix system
Monitor size 5 inches, 101.6×74.7 mm, 126 mm (4×3, 5 in.)
(w×h, diagonal measurement)
Segments 168,480 segments (234×720)
Input 16PIN connector
analog RGB
Operating temperatures
−10°C to +50°C (14°F to 122°F)

—Continued on next page—

DIGITAL MAP/NAVI SYSTEM

SONY®

GPS Antenna

Operating temperatures
−30°C to +75°C (−22°F to 167°F)
Water resistant device
jet stream resistant design
Antenna micro-strip flat type

Dimensions

Main unit approx. 210×50×179 mm ($8^{3}/_{8}\times2\times7^{1}/_{8}$in.) (w/h/d)
Monitor unit approx. 170×106×63 mm ($6^{3}/_{4}\times4^{1}/_{4}\times2^{1}/_{2}$in.) (w/h/d)
Remote commander
approx. 37×29×165 mm ($1^{1}/_{2}\times1^{3}/_{16}\times6^{1}/_{2}$in.) (w/h/d)
GPS antenna unit
approx. 45×48.5×19 mm ($1^{13}/_{16}\times1^{15}/_{16}\times{}^{3}/_{4}$in.) (w/h/d)

Mass

Main unit approx. 1.42 kg (3 lb. 2 oz.)
Monitor unit approx. 500 g (1 lb. 1 oz.)
Remote commander
approx. 90 g (3 oz.)
GPS antenna unit
approx. 140 g (6 oz.)

Supplied Accessories

Remote commander (RM-X52) (1)
Map disc (1 set)
Monitor extension cord (1)
Power code (1)
Mounting hardware (1 set)

Design and specifications are subject to change without notice.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

DEMONSTRATION MODE (French model only)

French model has demonstration mode.

Setting the Demonstration Mode :

1. Set to menu indication by pressing ENTER key.
2. Press ZOOM △ key.
3. Press INFO+key.
4. Press ZOOM ▽ key.

Releasing the Demonstration Mode :

Turn the power off.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

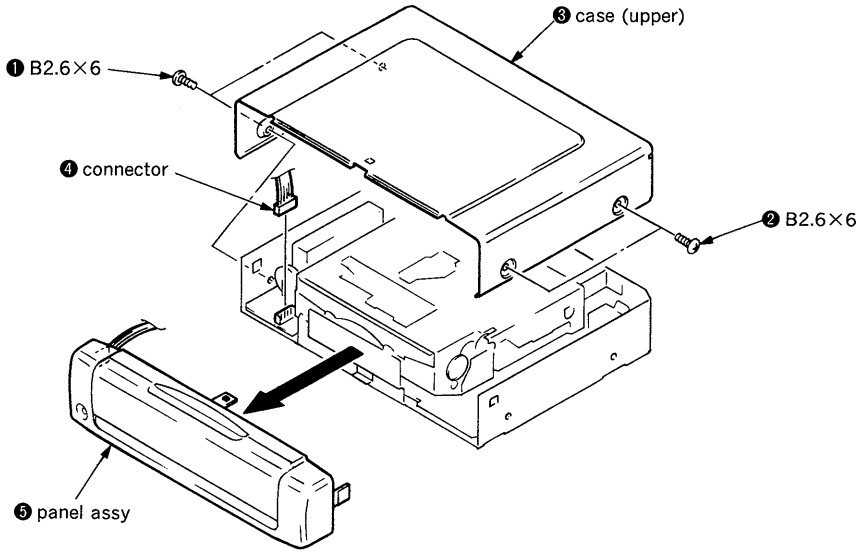
TABLE OF CONTENTS

Section	*Title*	*Page*
1.	**DISASSEMBLY**	
1-1.	Panel Assy	4
1-2.	Mechanism Deck Block	4
1-3.	Main Board	4
2.	**DIAGRAMS**	
2-1.	Block Diagram—CD Section—	5
2-2.	Block Diagram—Main Section—	8
2-3.	Block Diagram—Monitor Section—	11
2-4.	Semiconductor Lead Layouts	13
2-5.	Printed Wiring Boards—CD Section—	15
2-6.	Schematic Diagram—CD Section—	17
2-7.	Schematic Diagram—Main Section—	22
2-8.	Printed Wiring Boards—Main Section—	27
2-9.	Printed Wiring Boards—Monitor Section—	32
2-10.	Schematic Diagram—Monitor Section—	35
3.	**EXPLODED VIEWS**	
3-1.	CD ROM Section	46
3-2.	Mechanism Deck Section-1	47
3-3.	Mechanism Deck Section-2	48
3-4.	Monitor Section	49
4.	**ELECTRICAL PARTS LIST**	50
5.	**TEST MODE**	60
6.	**ELECTRICAL ADJUSTMENTS**	63
7.	**IC PIN DESCRIPTIONS**	67

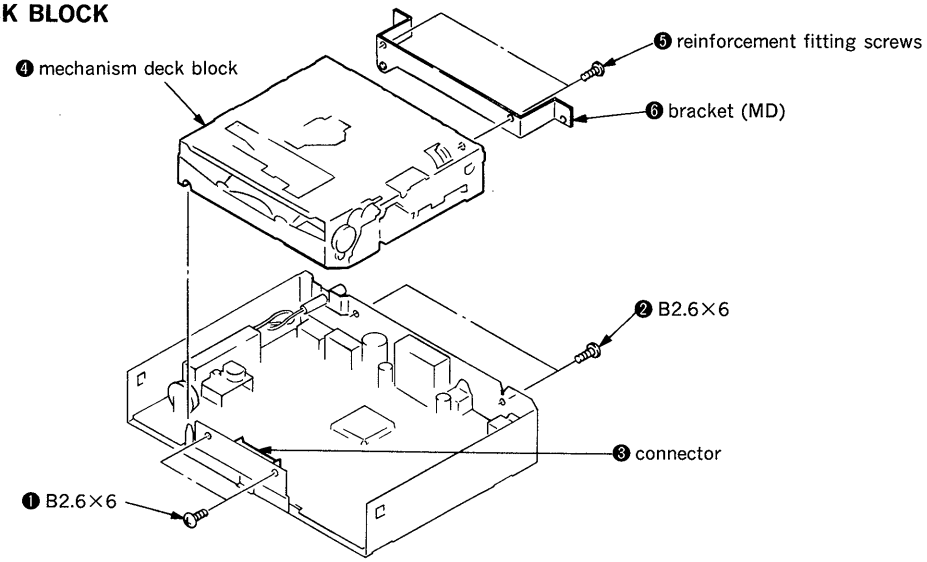
SECTION 1
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

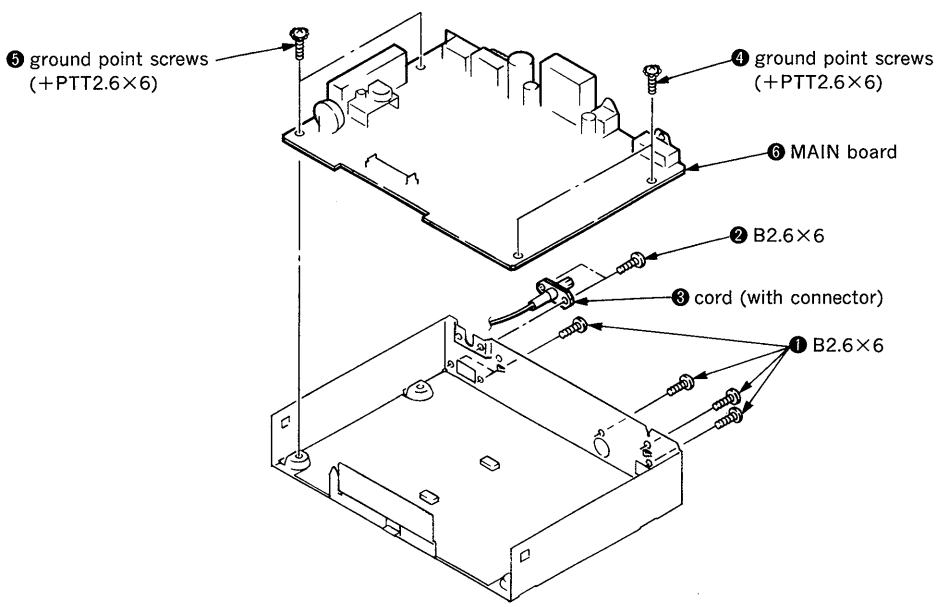
1-1. PANEL ASSY



1-2. MECHANISM DECK BLOCK

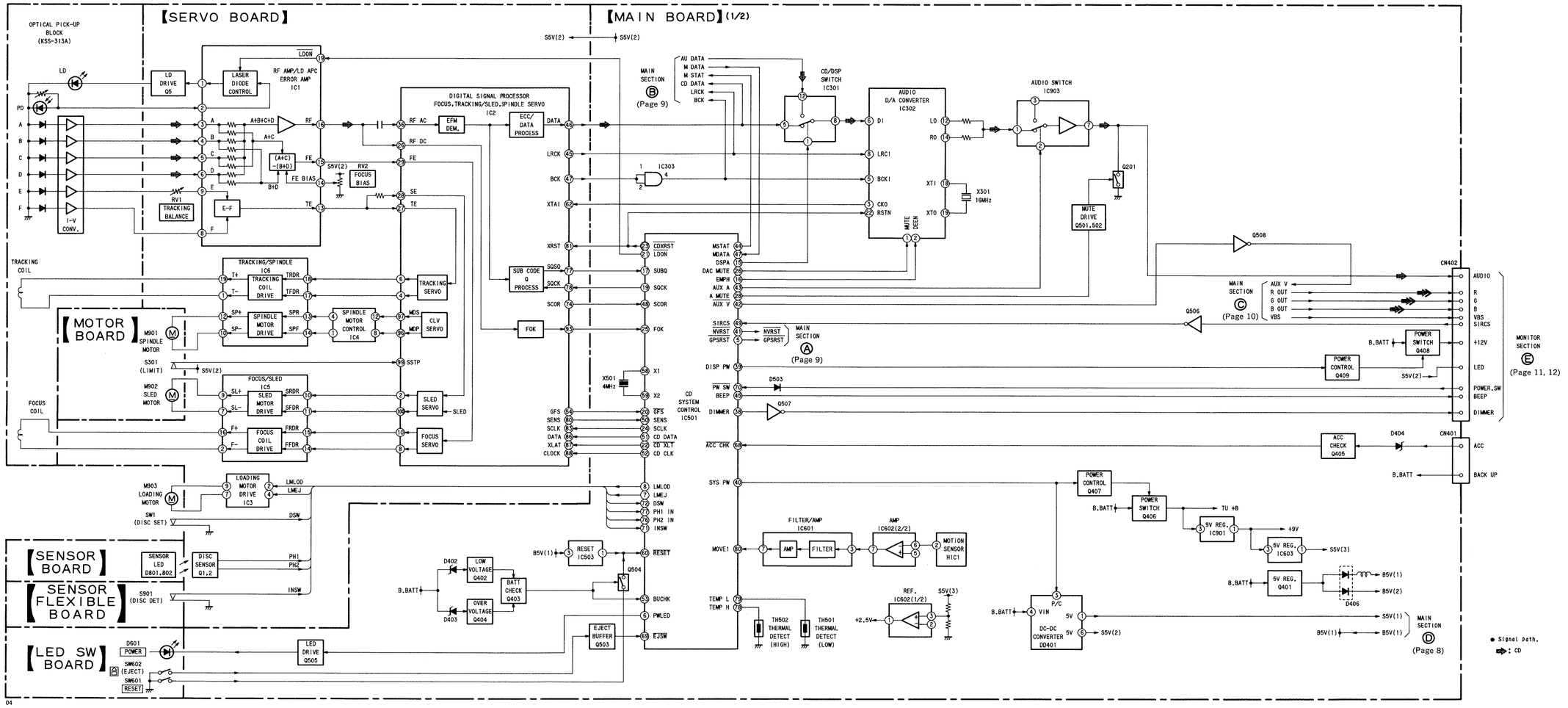


1-3. MAIN BOARD

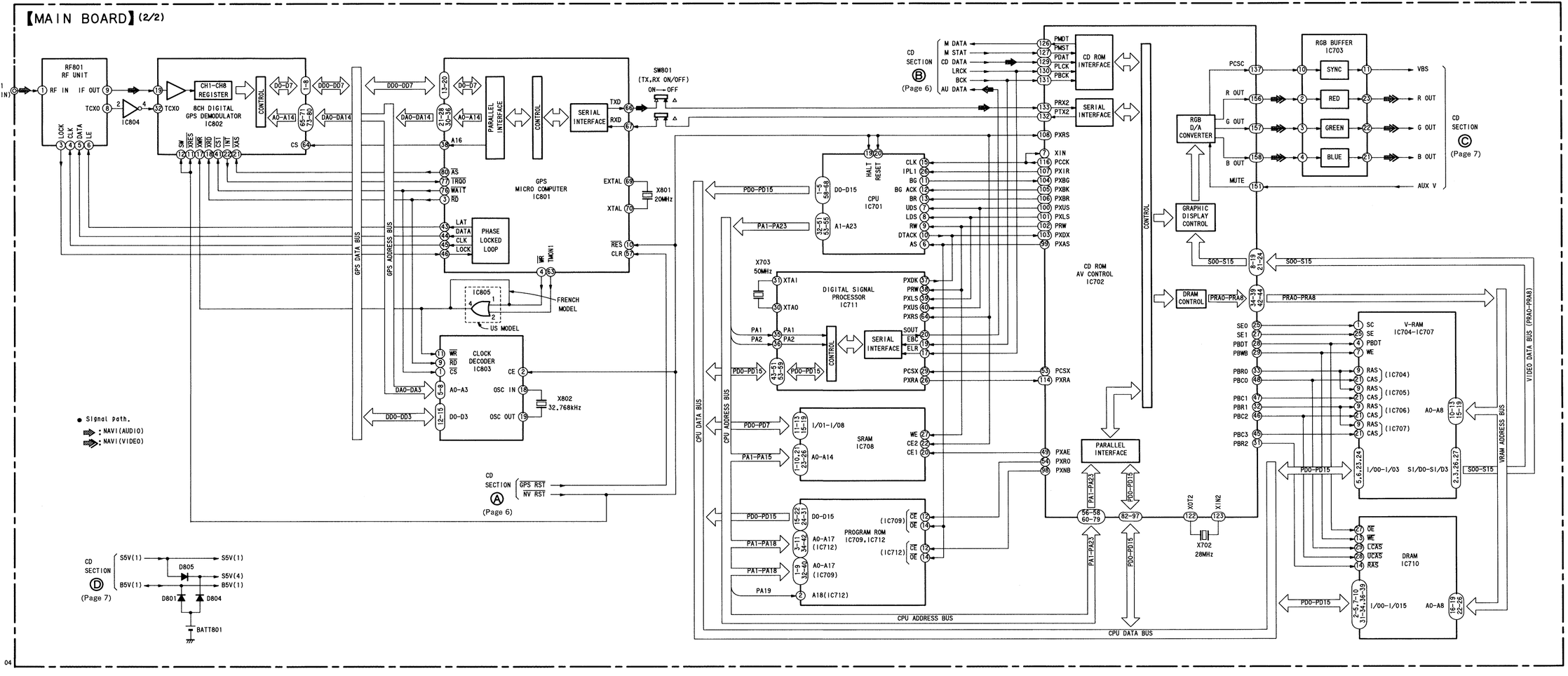


SECTION 2
DIAGRAMS

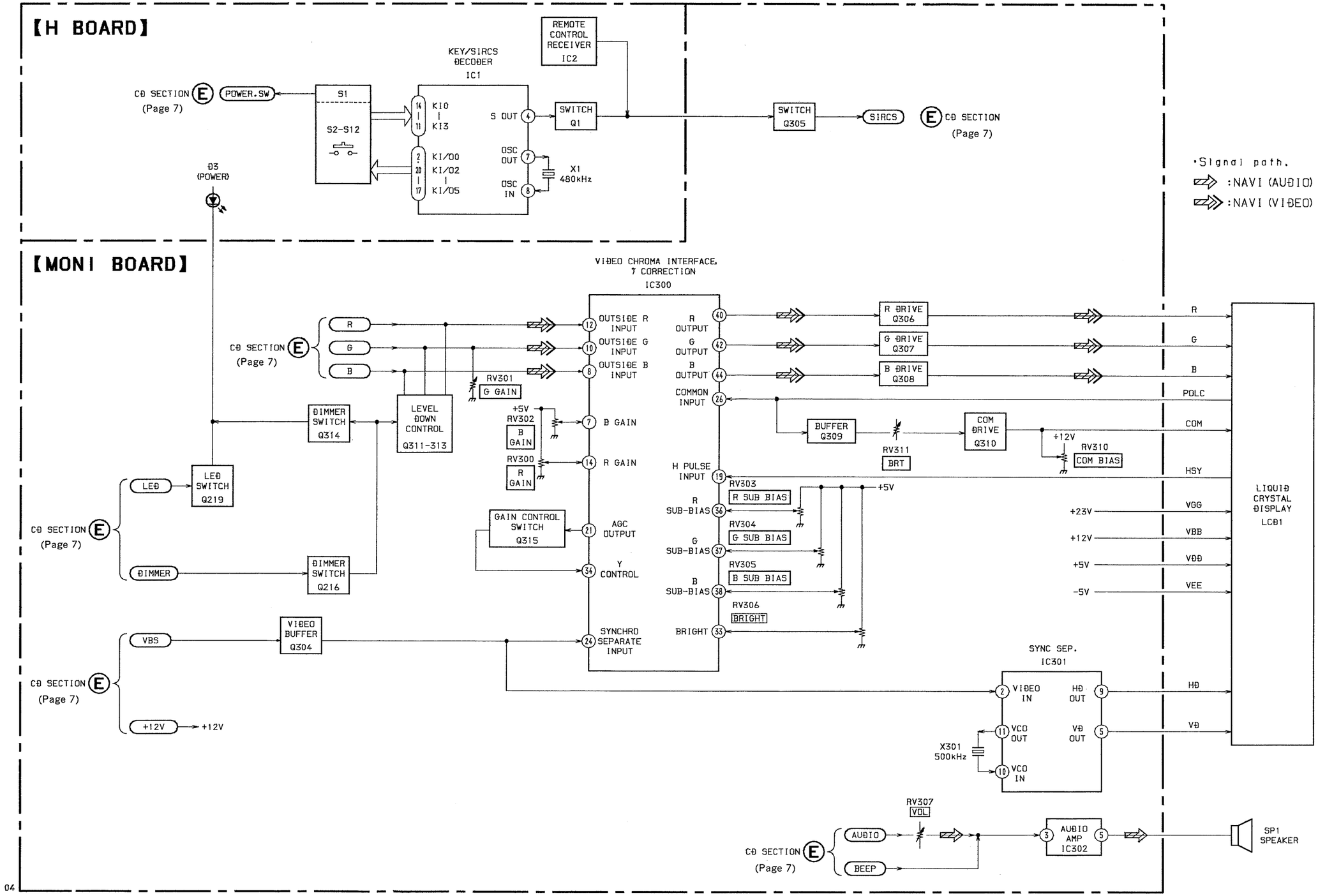
2-1. BLOCK DIAGRAM—CD SECTION—



2-2. BLOCK DIAGRAM—MAIN SECTION—



2-3. BLOCK DIAGRAM—MONITOR SECTION—



2-4. SEMICONDUCTOR LEAD LAYOUTS

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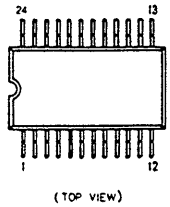

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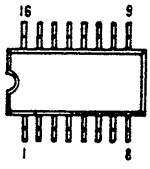

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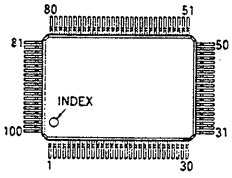

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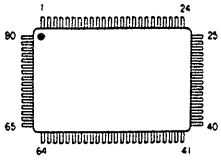

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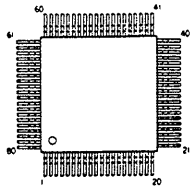

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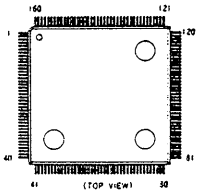

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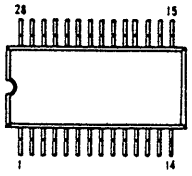

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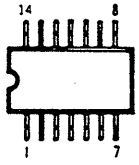

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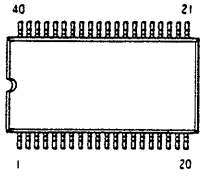

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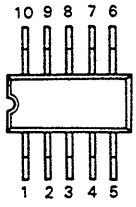

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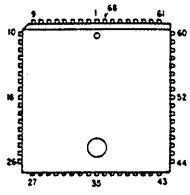

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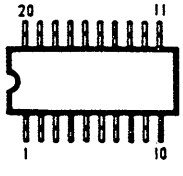

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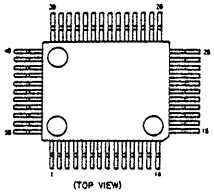

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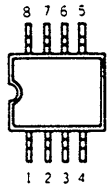

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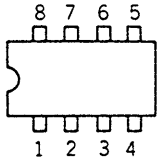

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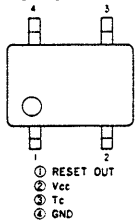

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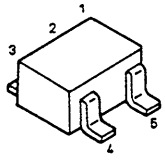

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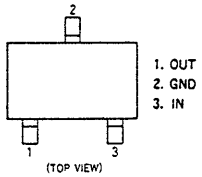

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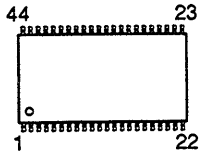

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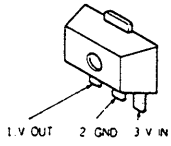

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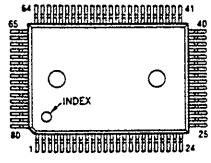

(TOP VIEW)

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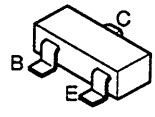

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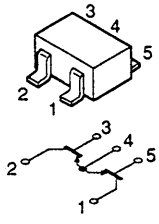

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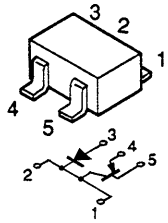

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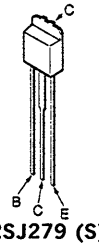

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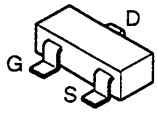

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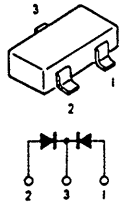

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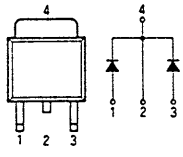

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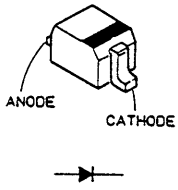

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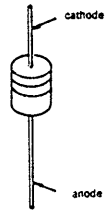

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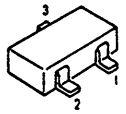
RD5.6M-B1
RD6.2M-B2
RD7.5M-B2
RD9.1M-B2



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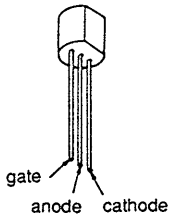

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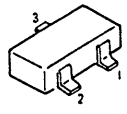
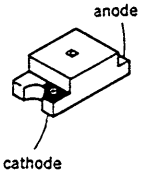
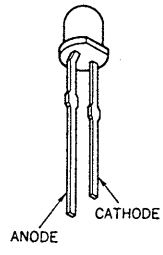


CL-140YG-X
CL-200IR-X-TU



SLR-342PGT32



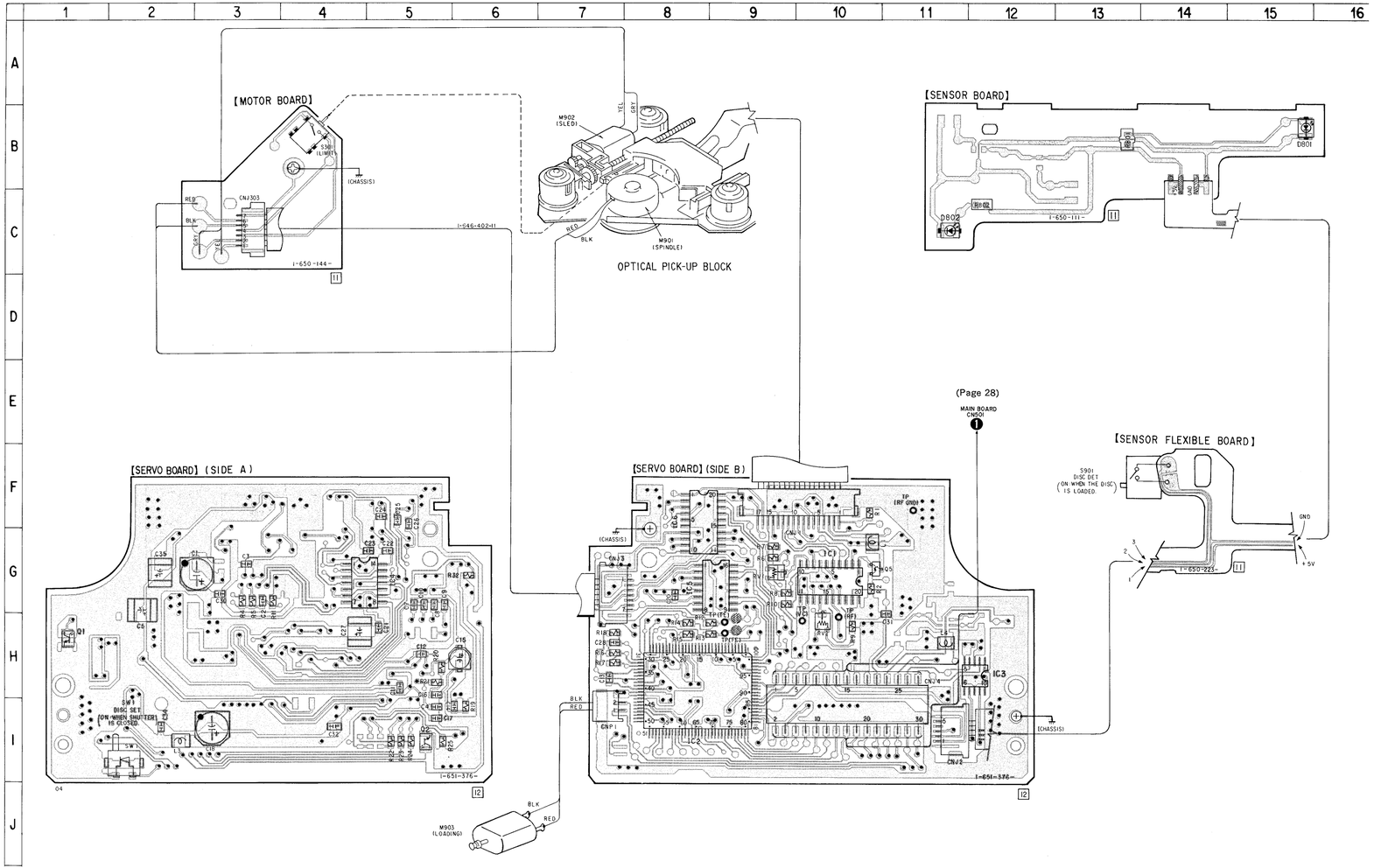
2-5. PRINTED WIRING BOARDS—CD SECTION— • Refer to page 13 for Semiconductor Lead Layouts.

• **Semiconductor Location**

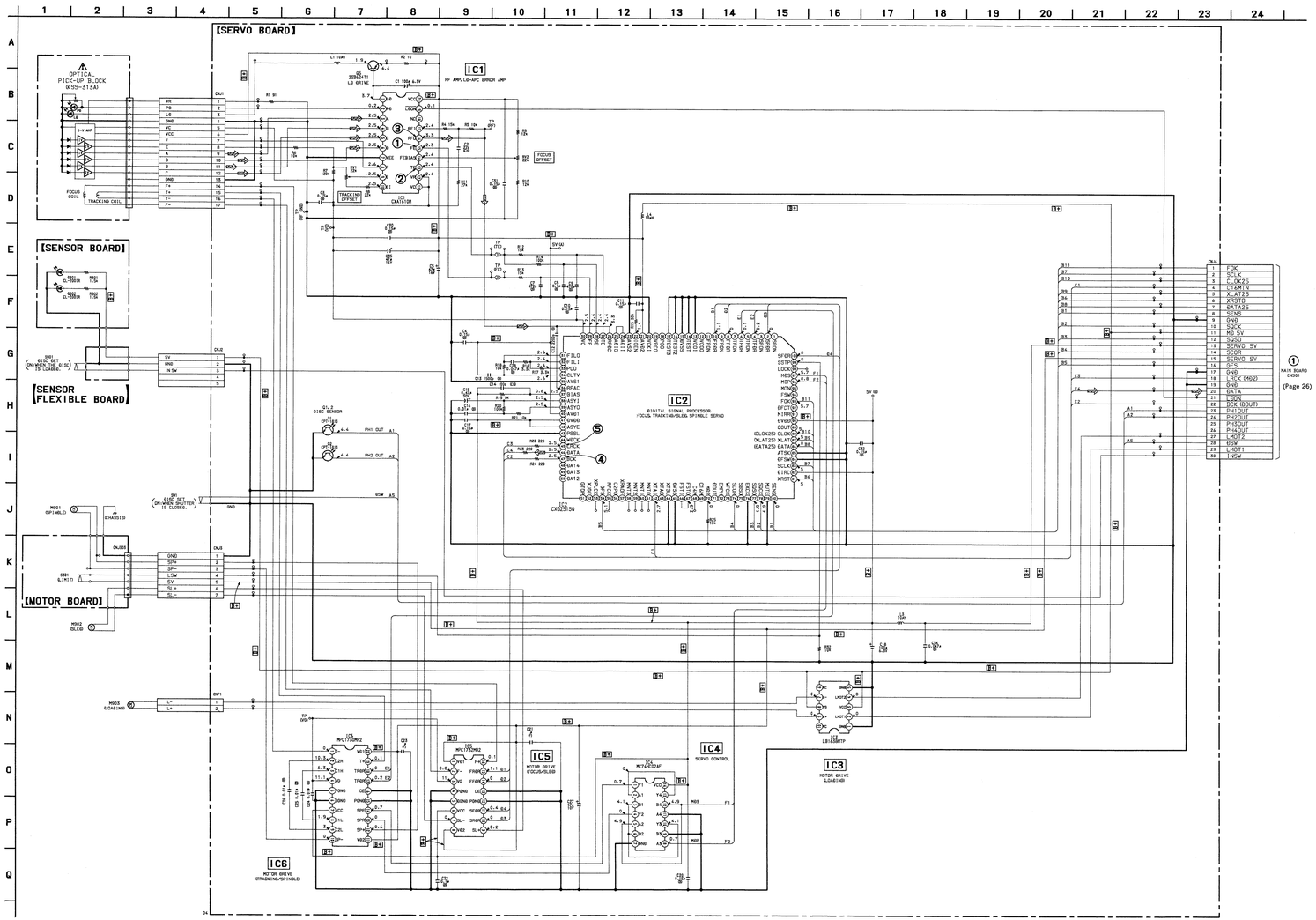
Ref. No.	Location
D801	B-16
D802	B-11
IC1	G-10
IC2	I-8
IC3	H-12
IC4	G-5
IC5	G-9
IC6	F-8
Q1	H-1
Q2	I-5
Q5	G-11

Note :

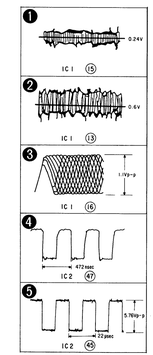
- ——— : parts extracted from the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
  (The other layer's patterns are not indicated.)



2-6. SCHEMATIC DIAGRAM—CD SECTION— • Refer to page 40 for IC Block Diagrams.



• Waveforms



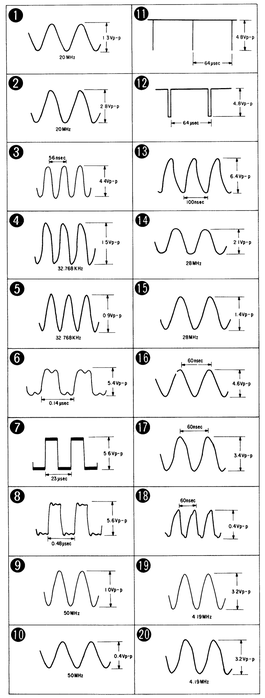
Note :
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line
- : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BACK Up and ACC terminals.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: CD Play
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇨ : CD

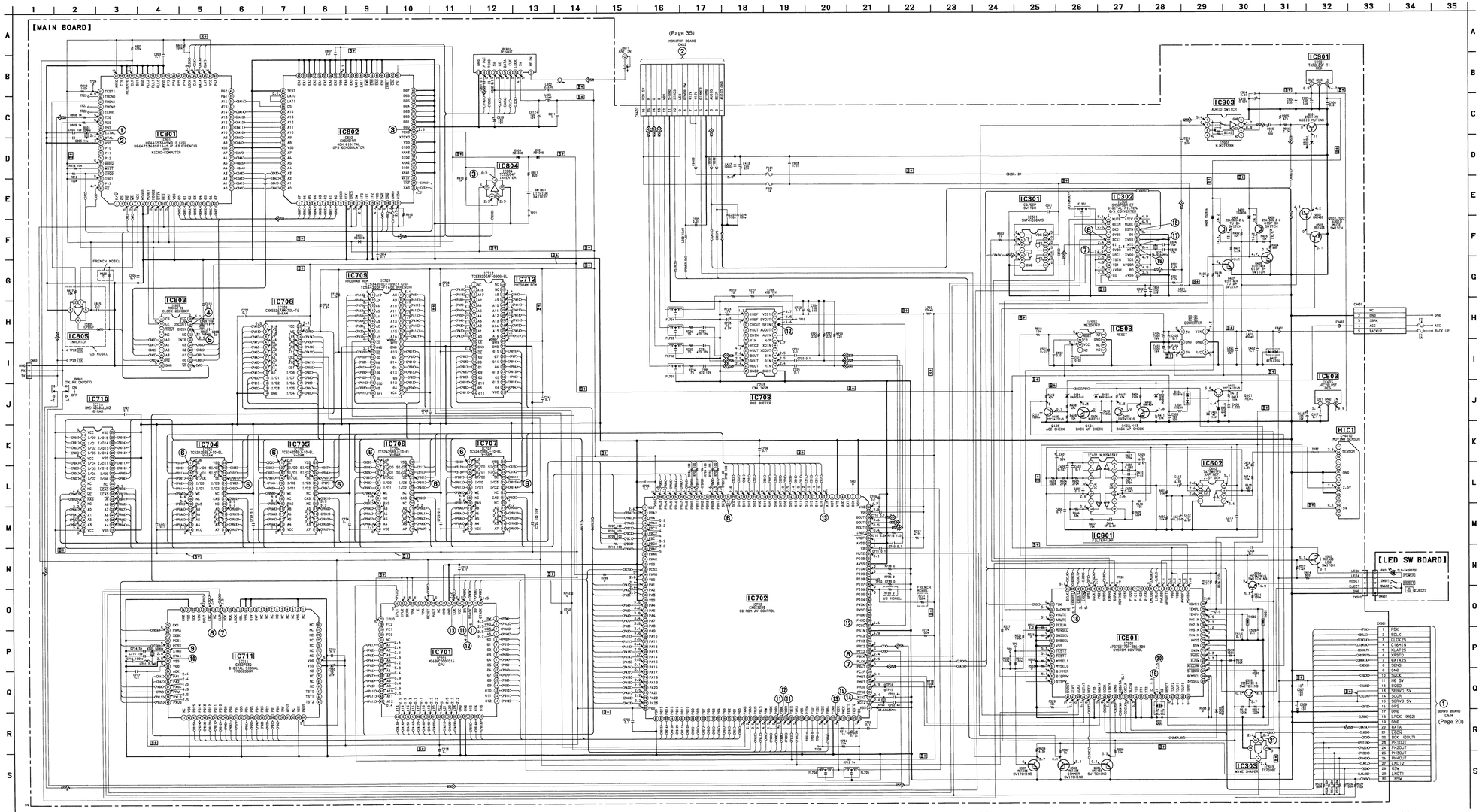
2-7. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 40 for IC Block Diagrams.

• Waveforms

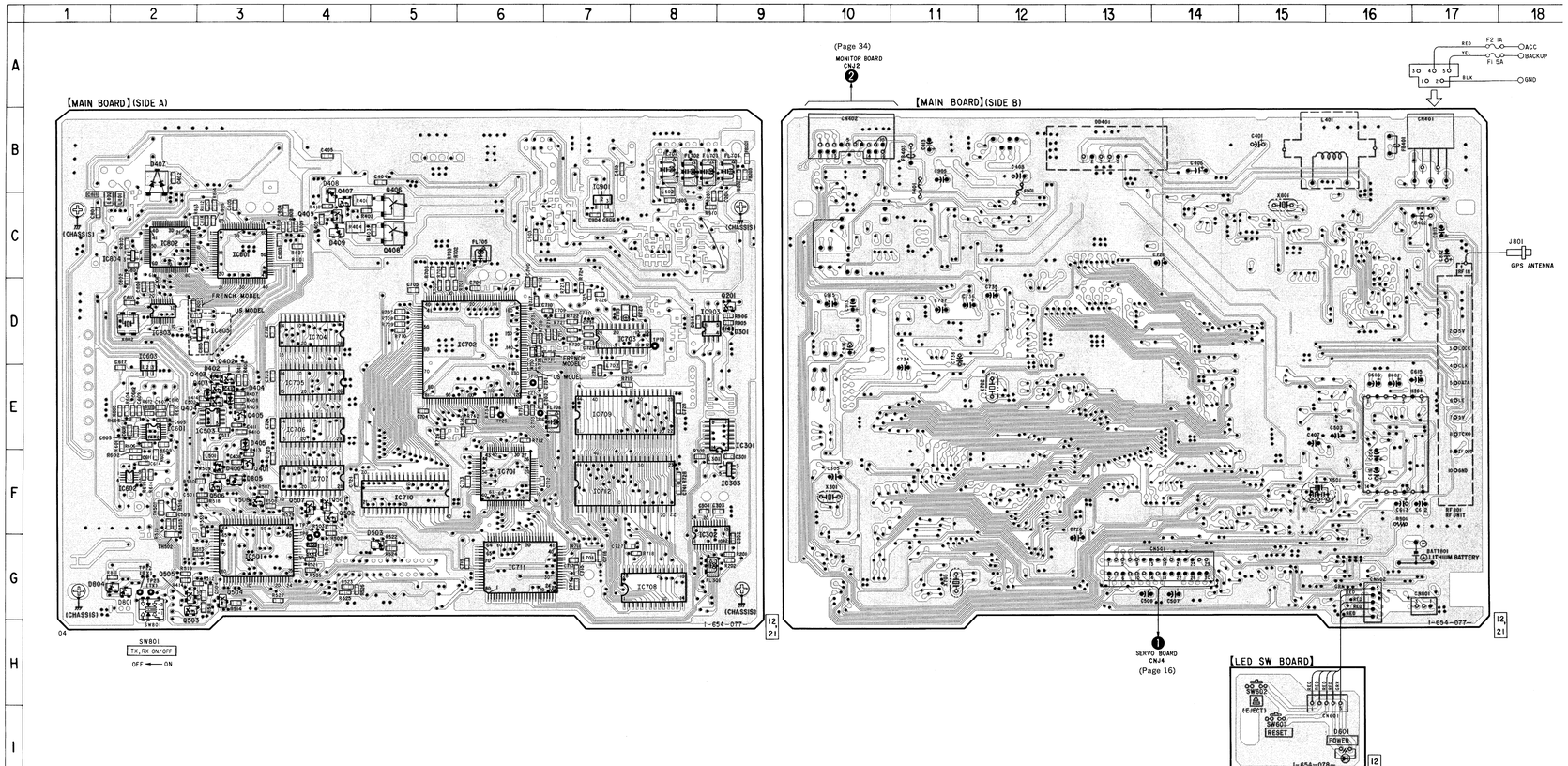


Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BACK Up and ACC terminals.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: CD Play
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : NAVI (AUDIO)
  ⇨ : NAVI (VIDEO)



2-8. PRINTED WIRING BOARDS—MAIN SECTION— • Refer to page 13 for Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location
D301	D-9
D402	E-3
D403	E-3
D404	E-3
D405	E-3
D406	F-3
D407	B-2
D408	C-4
D409	C-4
D503	G-5
D801	G-2
D804	G-2
D805	F-3
IC301	E-8
IC302	G-8
IC303	F-9
IC501	G-3
IC503	E-3
IC601	E-2
IC602	F-2
IC603	E-2
IC701	F-6
IC702	D-6
IC703	D-7
IC704	D-4
IC705	E-4
IC706	E-4
IC707	F-4
IC708	G-8
IC709	E-7
IC710	F-5
IC711	G-6
IC712	F-7
IC801	C-3
IC802	C-2
IC803	D-2
IC804	C-2
IC805	D-2
IC901	C-7
IC903	D-8
Q201	D-9
Q401	F-3
Q402	E-3
Q403	E-3
Q404	E-3
Q405	E-3
Q406	C-5
Q407	C-4
Q408	C-5
Q409	C-4
Q501	F-4
Q502	F-4
Q503	G-2
Q504	G-3
Q505	G-2
Q506	F-3
Q507	F-4
Q508	F-3

Note :
- ——— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen. (The other layer's patterns are not indicated.)

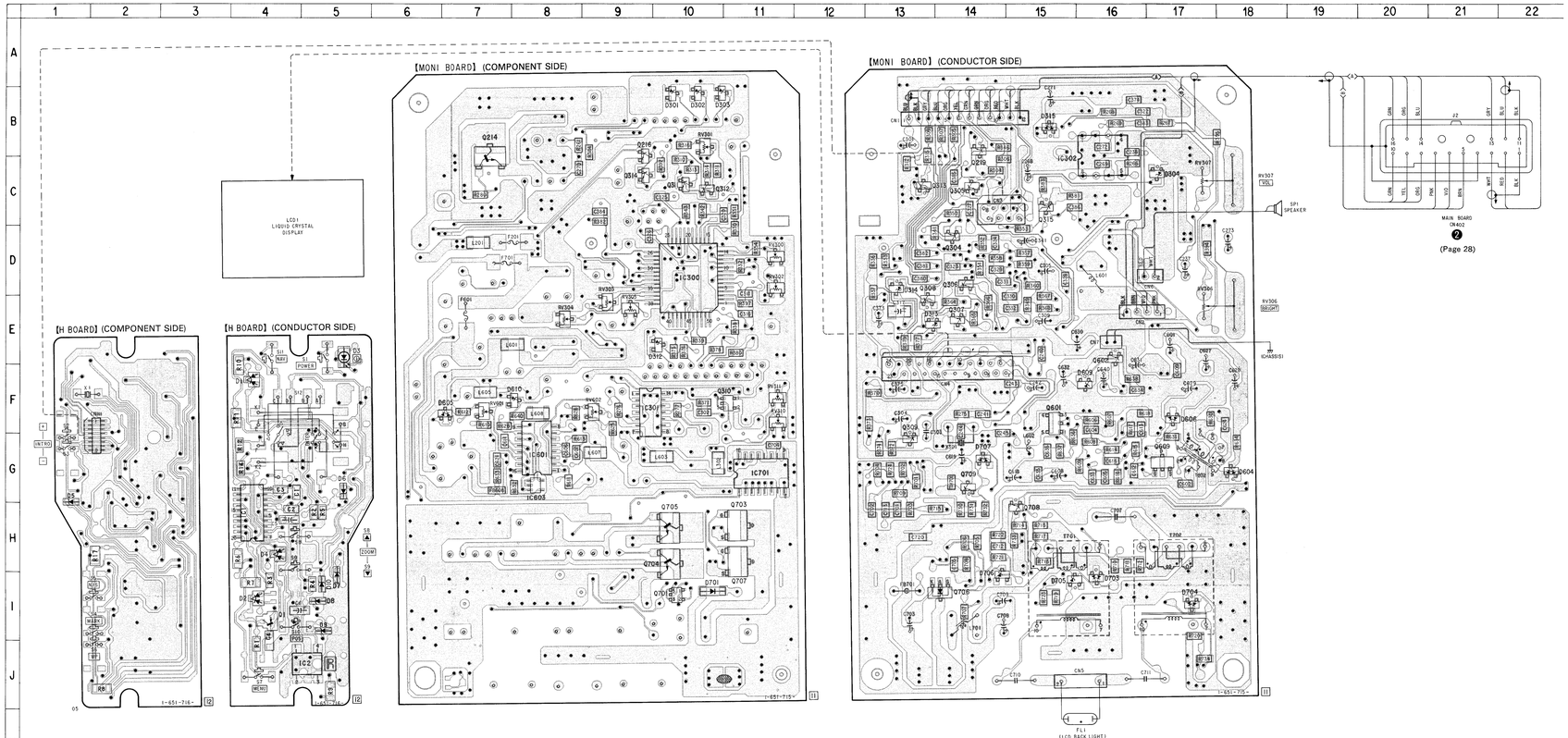
● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	F-4	IC301	F-9
D2	I-4	IC302	B-16
D3	E-5	IC601	G-8
D4	H-4	IC603	G-8
D5	G-1	IC701	G-11
D6	G-5		
D7	H-5	Q1	I-4
D8	I-5	Q214	B-7
D9	I-5	Q216	B-9
D10	I-5	Q219	B-14
D301	A-10	Q304	D-14
D302	A-10	Q305	C-14
D303	A-10	Q306	D-14
D304	C-17	Q307	E-14
D312	E-10	Q308	D-13
D313	E-13	Q309	F-13
D314	D-13	Q310	F-10
D315	C-15	Q311	C-10
D604	G-18	Q312	C-10
D605	F-6	Q313	C-13
D606	F-17	Q314	C-9
D609	F-15	Q315	C-15
D610	F-7	Q601	F-15
D701	I-10	Q602	E-16
D703	I-16	Q609	G-17
D704	I-17	Q701	I-10
D705	I-15	Q703	H-11
D706	H-14	Q704	H-10
D707	G-14	Q705	H-10
		Q706	I-13
IC1	G-4	Q707	H-11
IC2	J-4	Q708	G-15
IC300	D-10	Q709	G-14

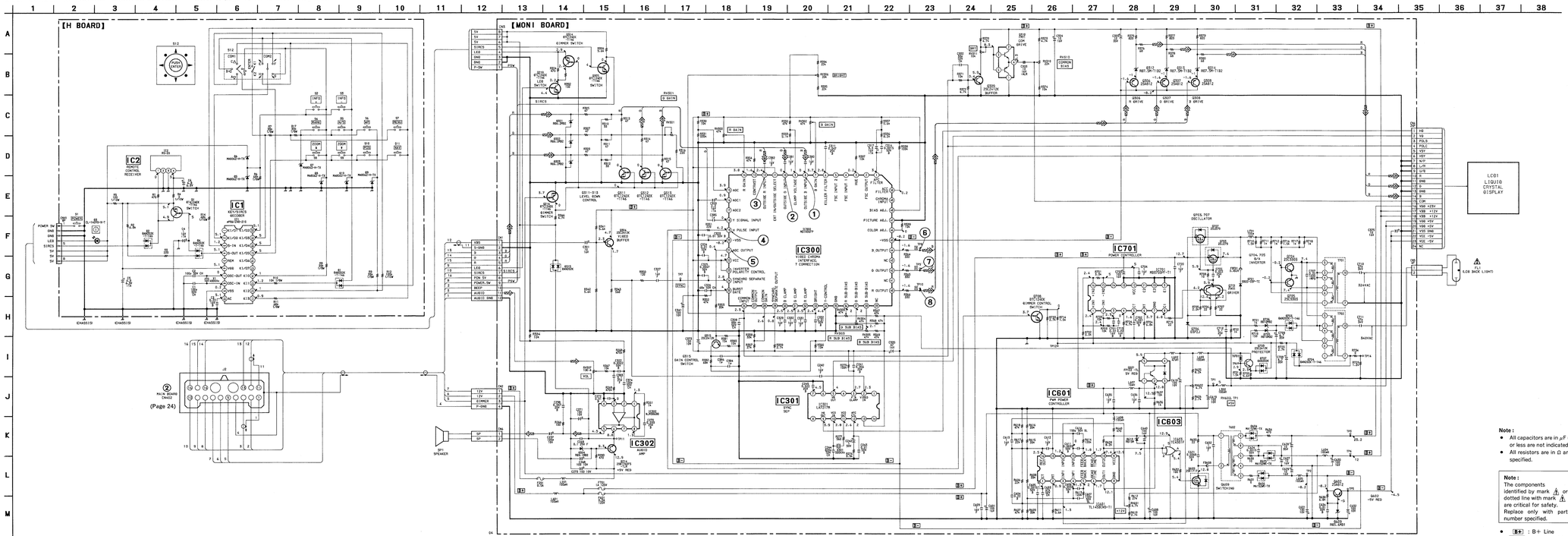
Note :

- ——— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒▒ : Pattern on the side which is seen.
  (The other layer's patterns are not indicated.)

2-9. PRINTED WIRING BOARDS—MONITOR SECTION— ● Refer to page 13 for Semiconductor Lead Layouts.



2-10. SCHEMATIC DIAGRAM—MONITOR SECTION— • Refer to page 40 for IC Block Diagrams.



• Waveforms

❶ IC300 ⑧
0.22Vp-p

❷ IC300 ⑩
0.8Vp-p
16.6msec

❸ IC300 ⑫
0.22Vp-p

❹ IC300 ⑭
4.5Vp-p
63.6 μsec

❺ TP8
5.6Vp-p

❻ TP9
5.6Vp-p

❼ TP10
6Vp-p

Note :
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.

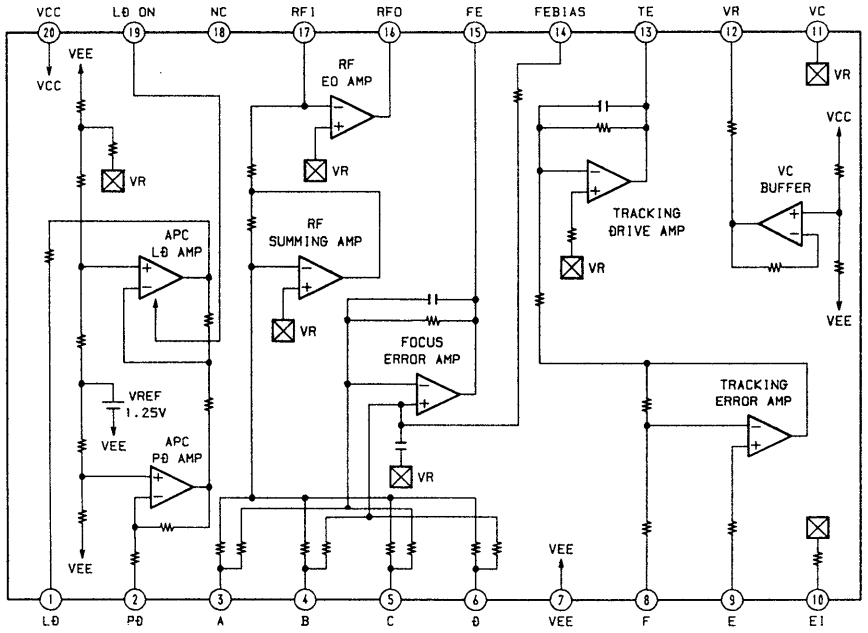
Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- [B+] : B+ Line
- [ ] : adjustment for repair.

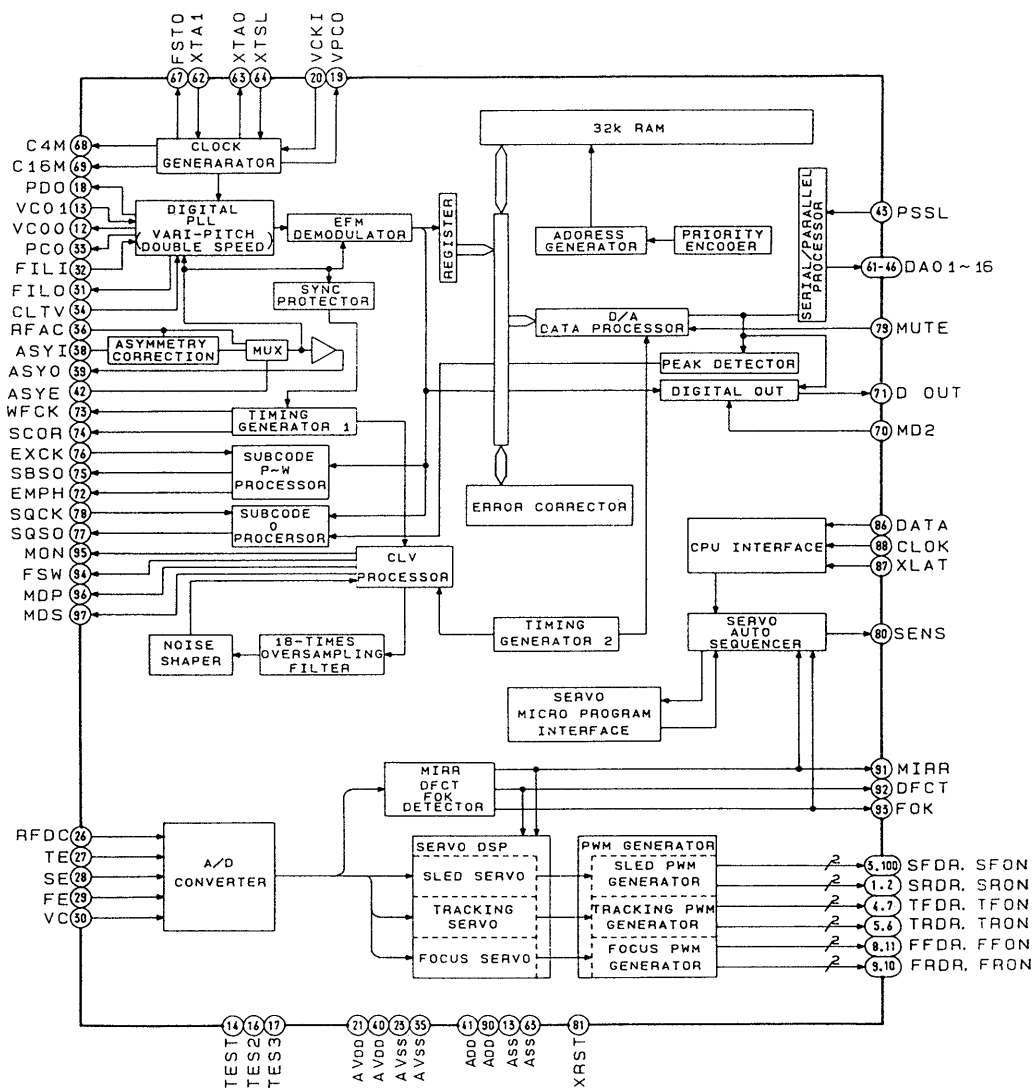
- Power voltage is dc 14.4V and fed with regulated dc power supply from BACK Up and ACC terminals.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: CD Play
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : NAVI (AUDIO)
  ⇨ : NAVI (VIDEO)

• IC Block Diagrams

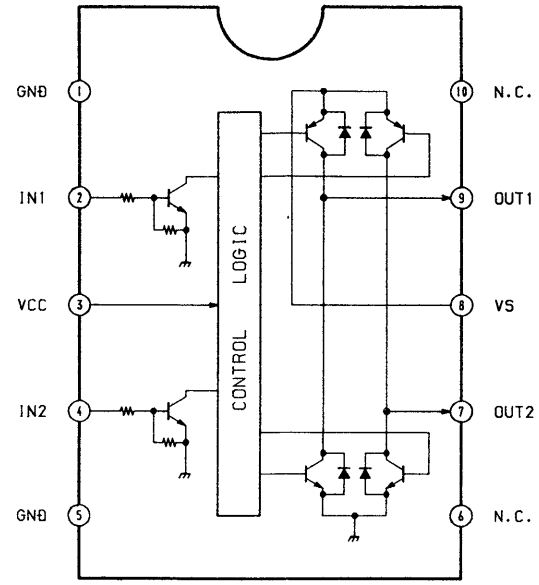
IC1 CXA1610M (SERVO BOARD)



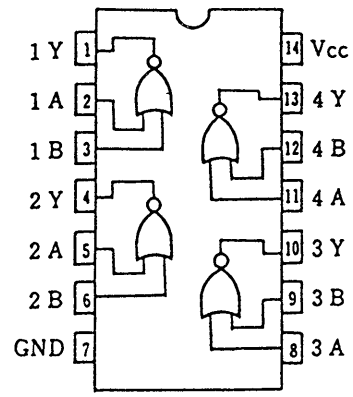
IC2 CXD2515Q



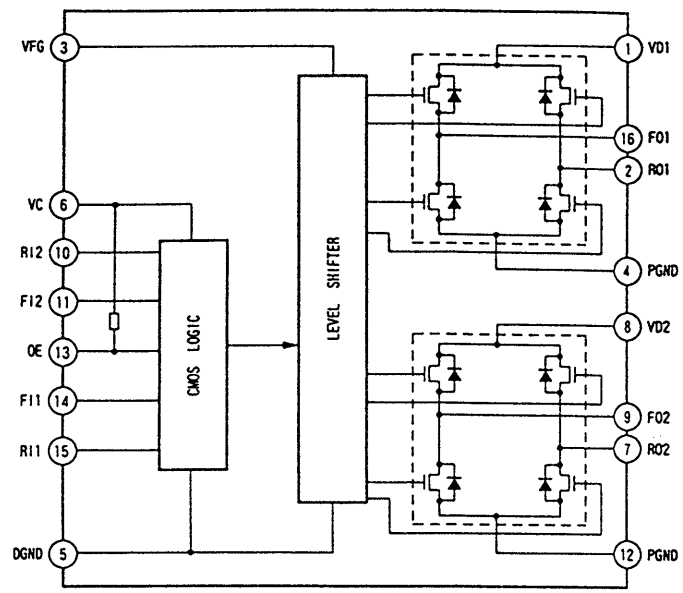
IC3 LB1638MTP



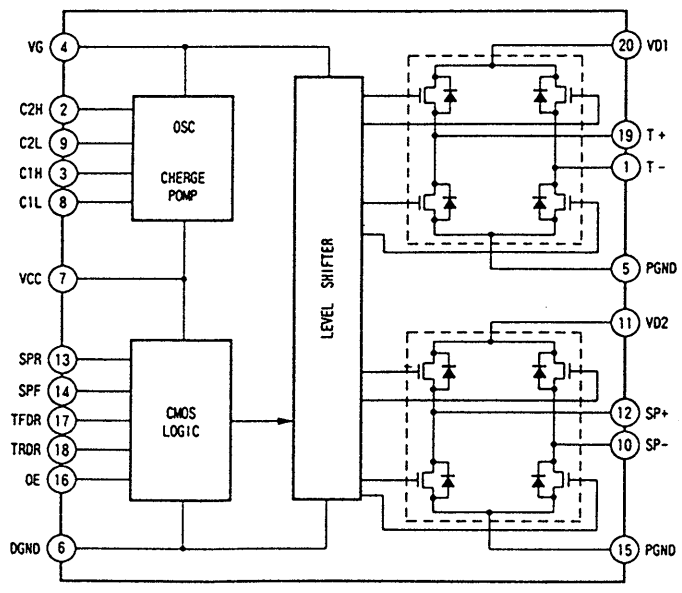
IC4 MC74HC02AF



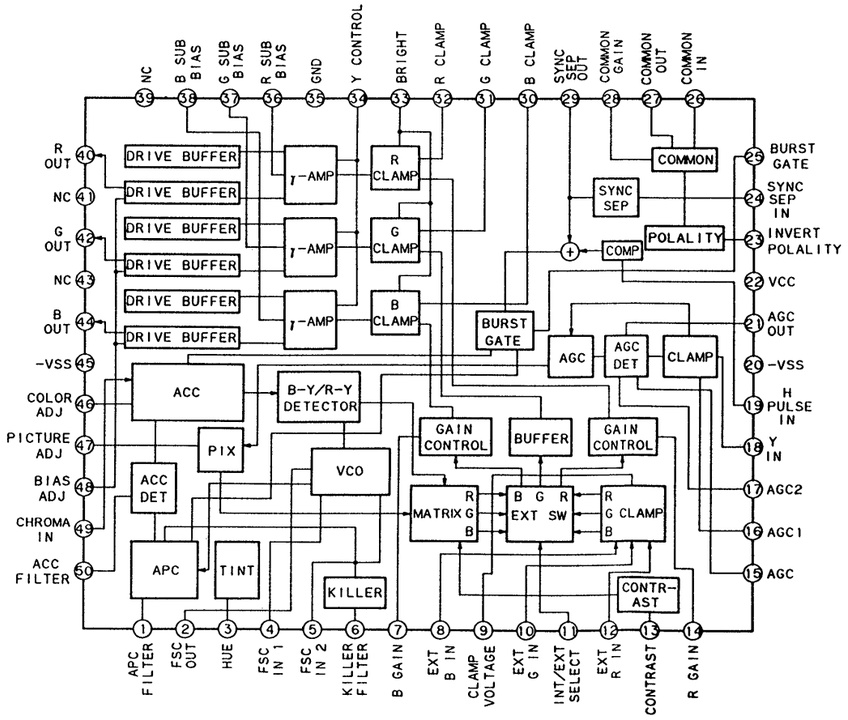
IC5 MPC1732MR2



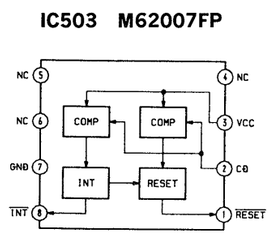
IC6 MPC1730MR2



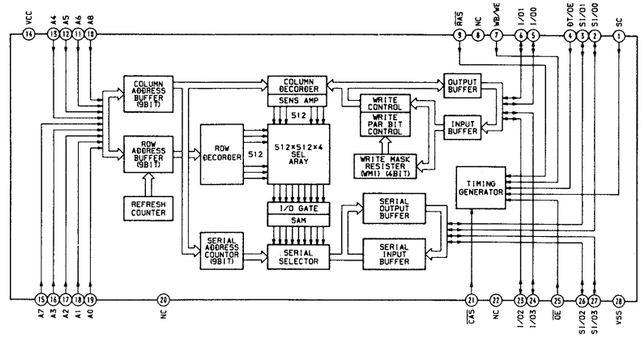
IC300 M51406FP



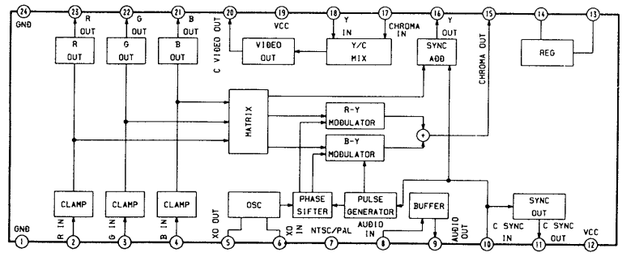
IC503 M62007FP



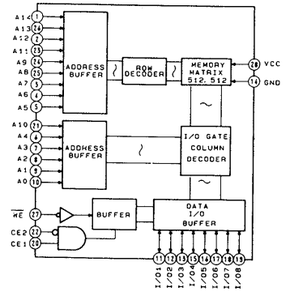
IC704-707 TC524258BJ-10-EL



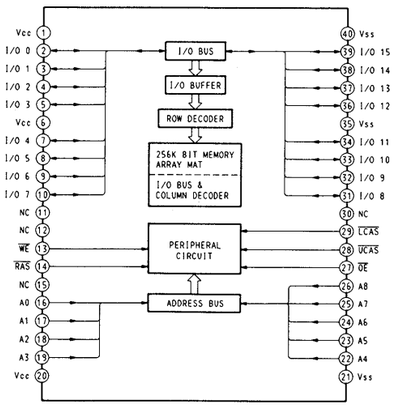
IC703 CXA1145M



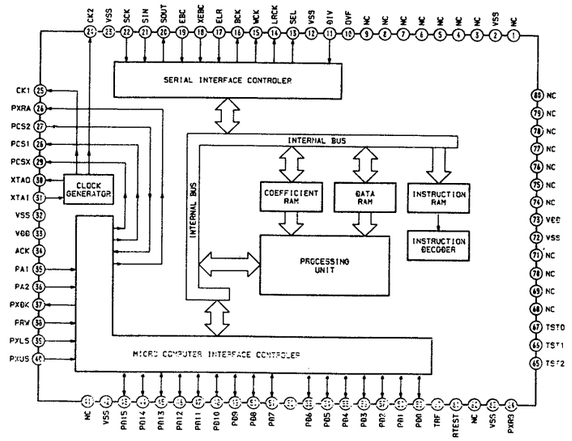
IC708 CXK58267AM-70L-T6



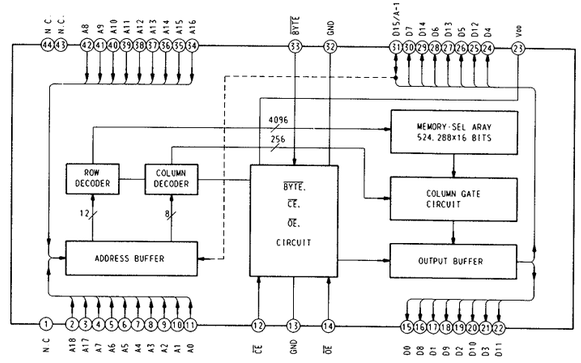
IC710 HM514260ALJ8Z



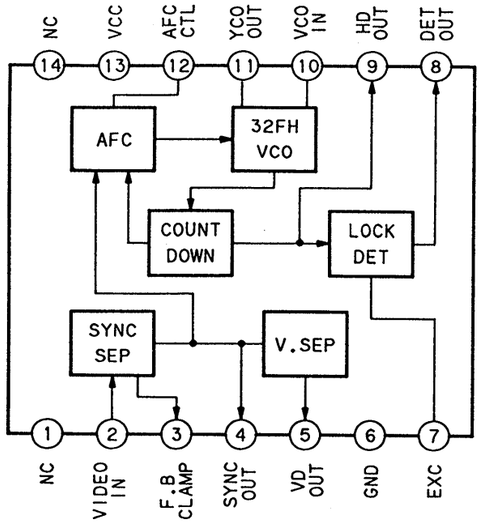
IC711 CXD2703Q



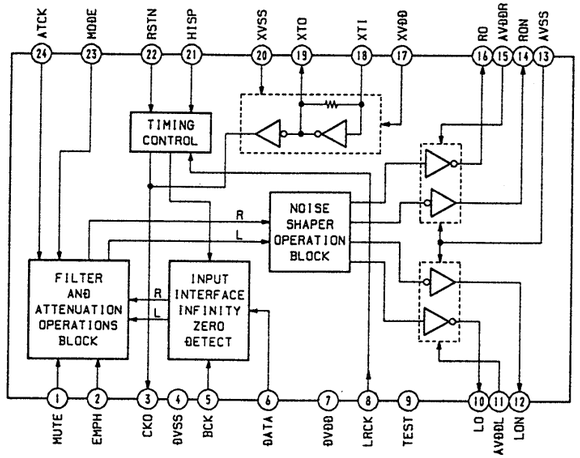
IC712 TC538200AF-G909-EL



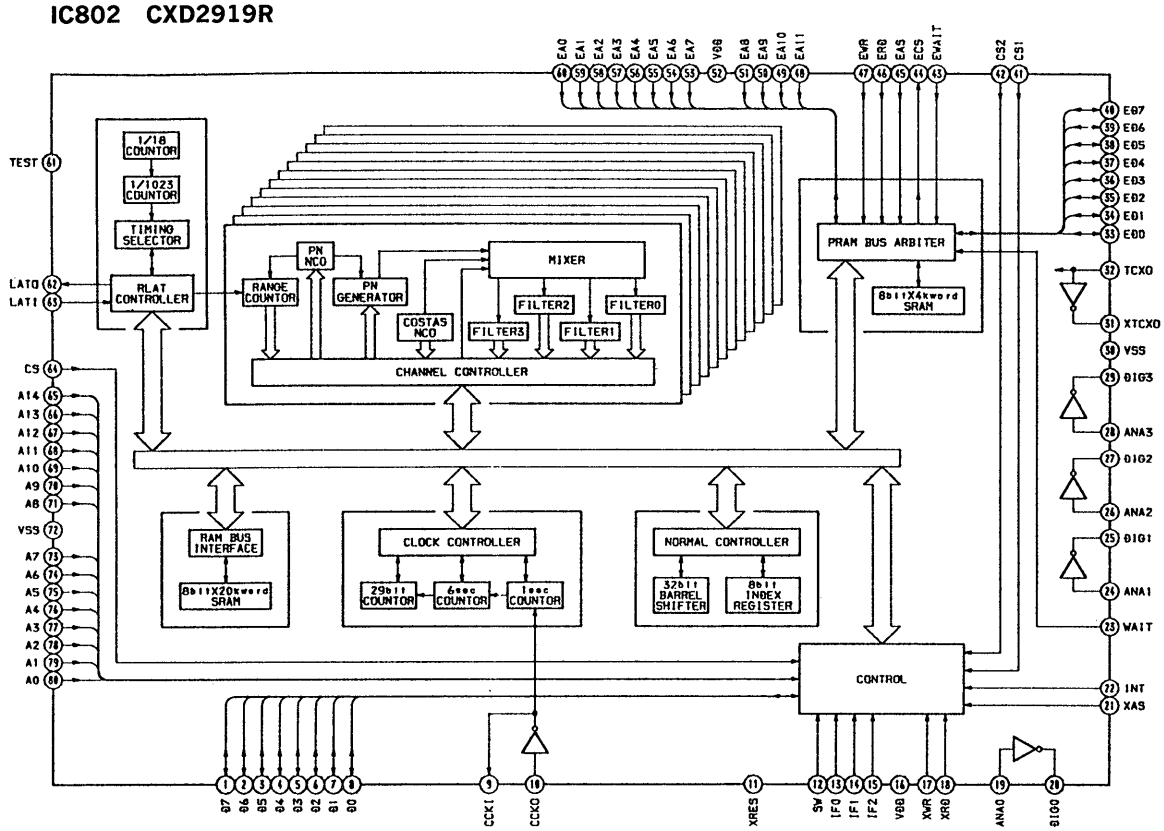
IC301 LA7217M (MONI BOARD)



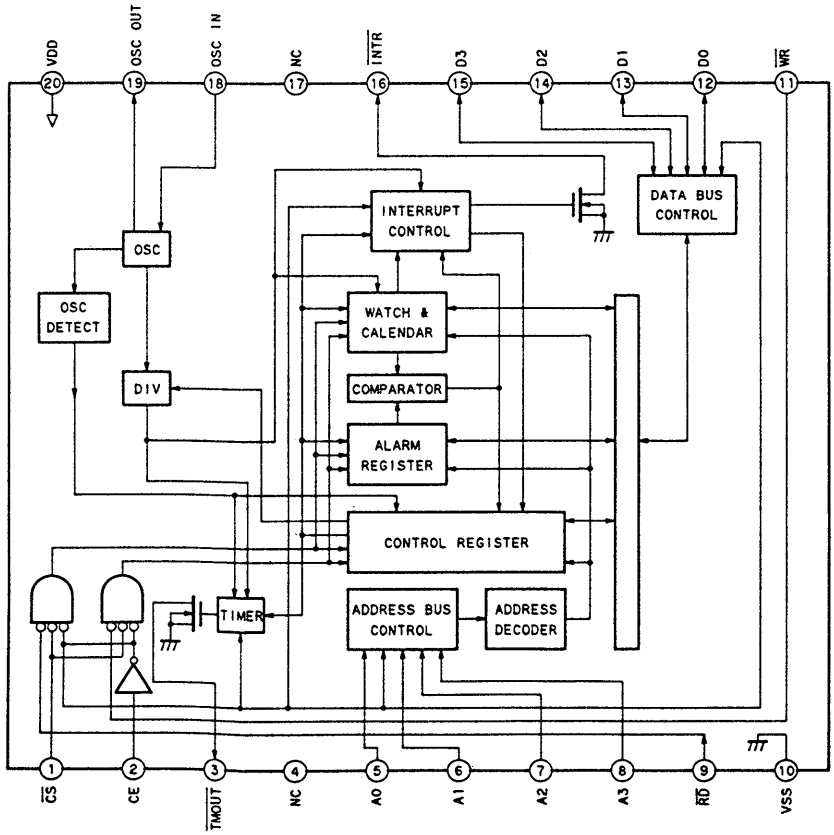
IC302 SM5875BM-ET



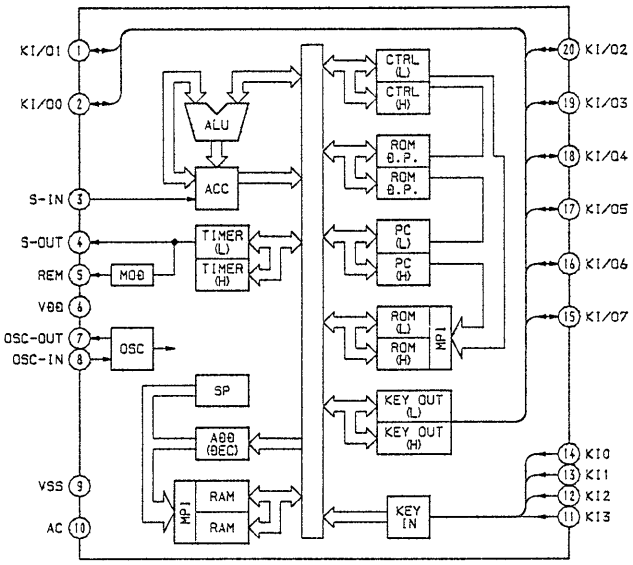
IC802 CXD2919R



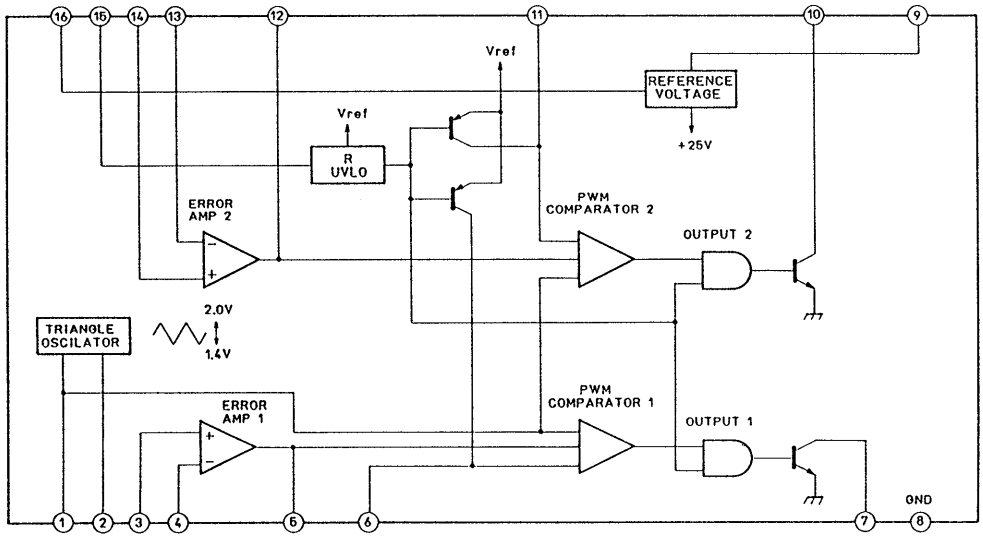
IC803 RS5C62-E2



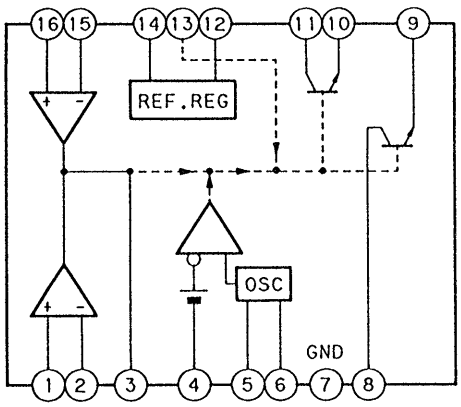
IC1 μPD6124G-210 (H BOARD)



IC601 TL145BCNS-T1



IC701 MB3759PF-T1



SECTION 3
EXPLODED VIEWS

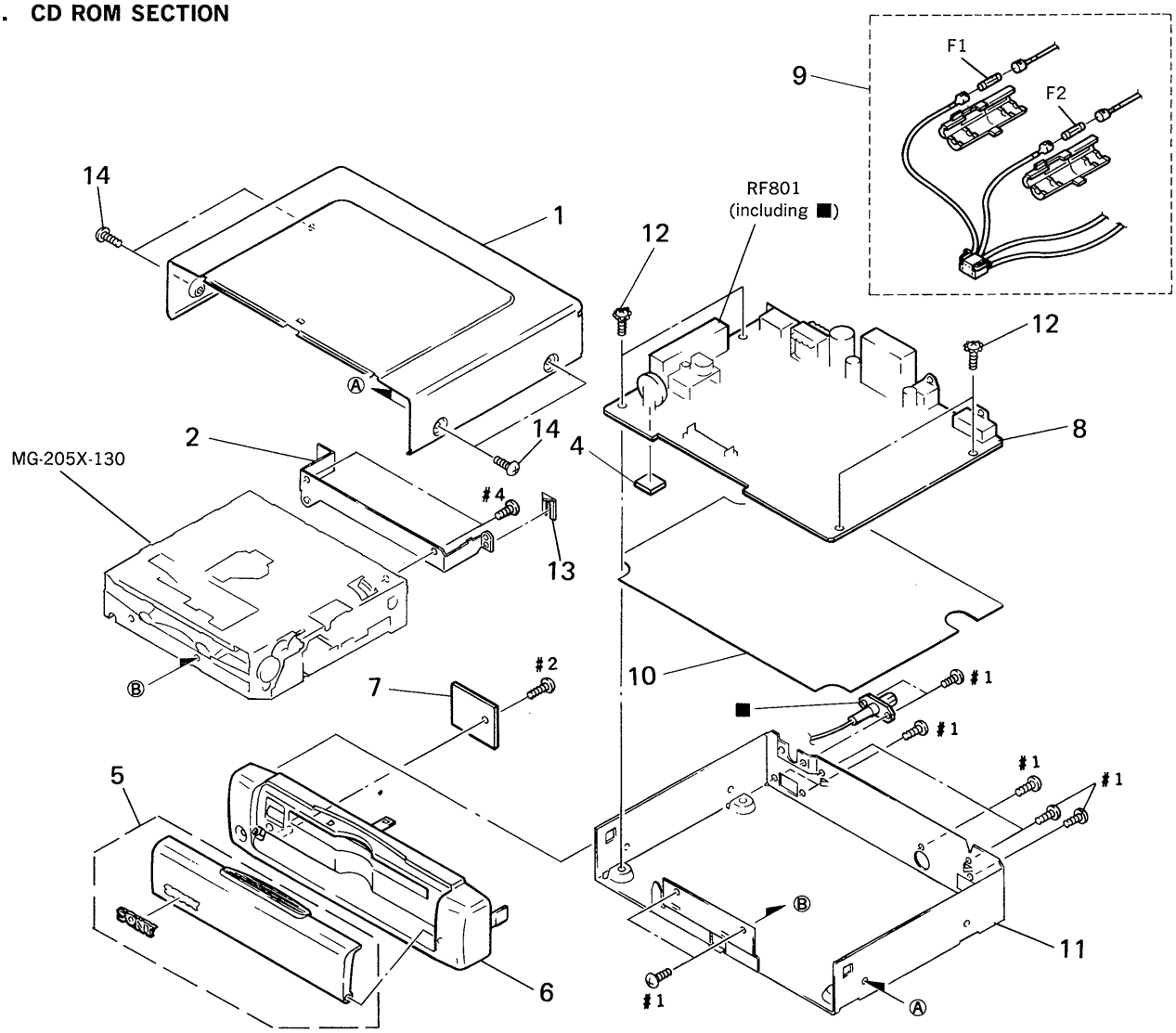
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

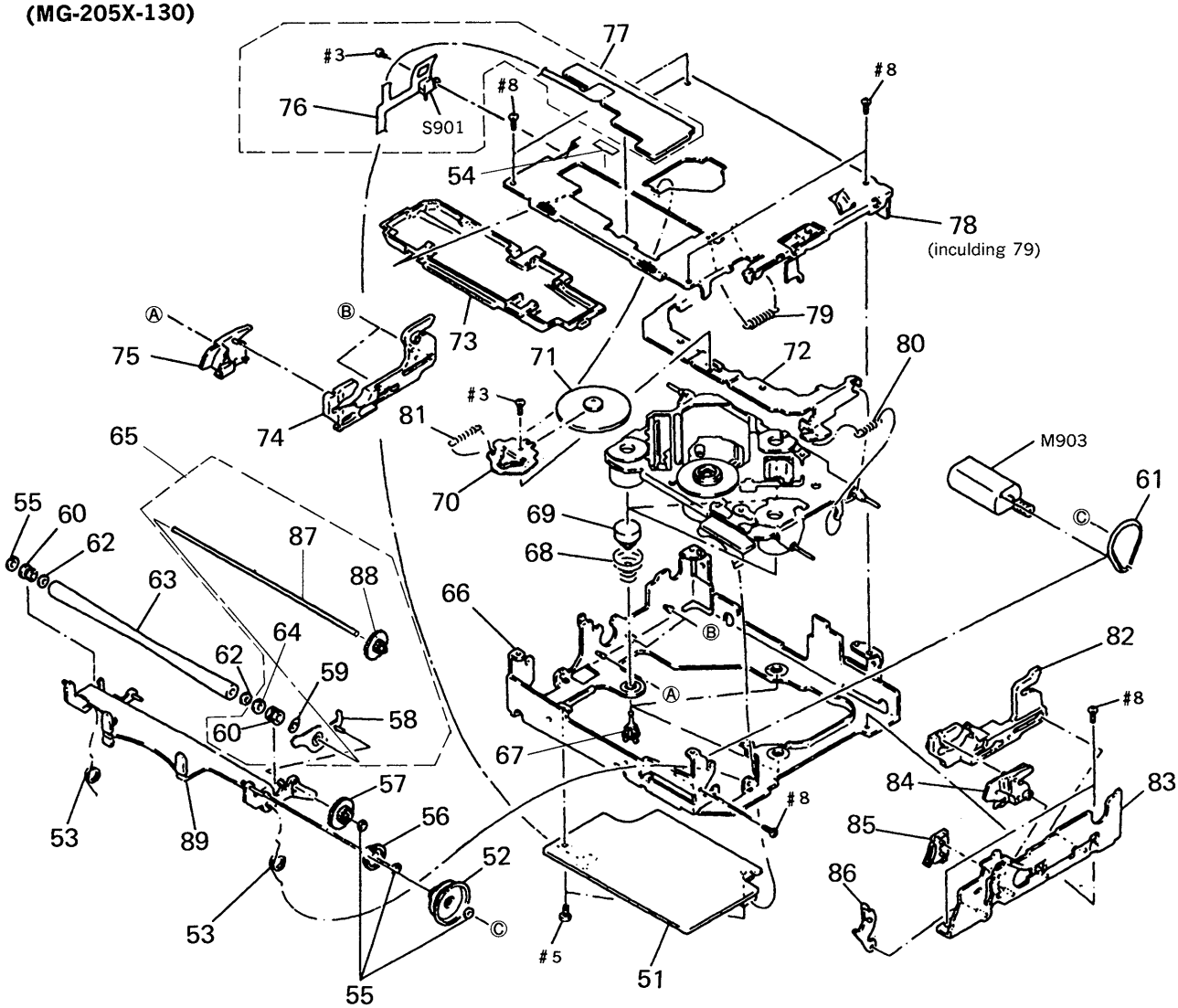
3-1. CD ROM SECTION



Ref. No.	Part No.	Description	Remark
* 1	3-917-760-41	CASE (UPPER)	
* 2	3-921-118-01	BRACKET (MD)	
* 4	3-902-282-01	CUSHION (A)	
5	X-3369-116-1	DOOR ASSY	
6	X-3369-118-1	PANEL ASSY	
* 7	1-654-078-11	LED SW BOARD	
* 8	A-3298-363-A	MAIN BOARD, COMPLETE (US)	
* 8	A-3298-966-A	MAIN BOARD, COMPLETE (French)	
9	1-690-989-61	CORD (WITH CONNECTOR)	

Ref. No.	Part No.	Description	Remark
* 10	3-917-761-01	SHEET, INSULATING	
* 11	3-917-758-21	CASE (LOWER)	
12	3-915-923-01	SCREW, GROUND POINT	
* 13	3-918-672-01	PLATE, GROUND	
14	3-912-956-01	SCREW (2.6X6) (CU), +BVTT	
F1	1-532-421-00	FUSE (5A)	
F2	1-532-360-XX	FUSE (1A)	
RF801	1-467-812-21	RF UNIT	

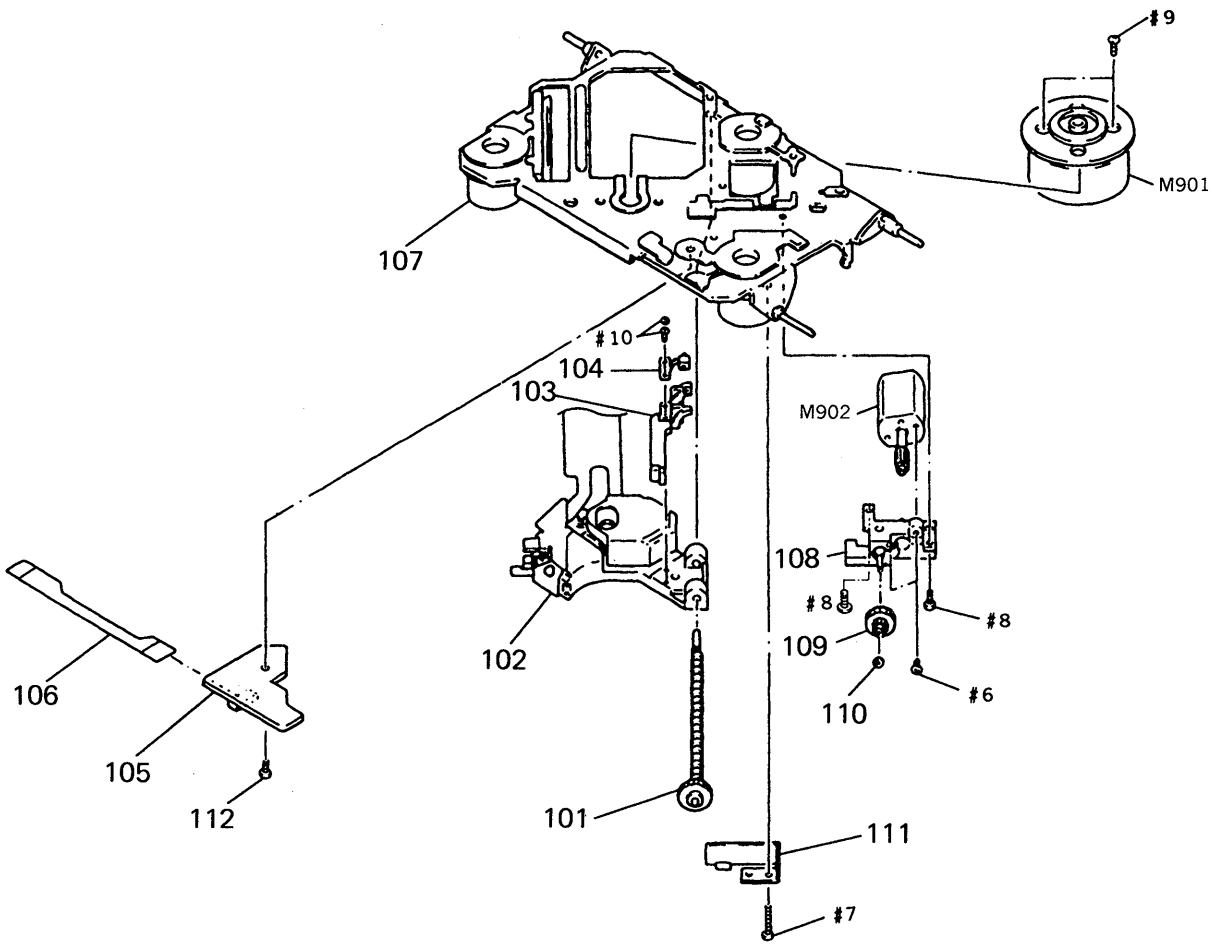
3-2. MECHANISM DECK SECTION-1
(MG-205X-130)



Ref. No.	Part No.	Description	Remark
* 51	A-3295-950-A	SERVO BOARD, COMPLETE	
52	3-384-894-01	GEAR (R1)	
53	3-384-900-01	SPRING (PRESS)	
* 54	3-704-132-01	LABEL (K), SELF	
55	3-578-242-11	WASHER	
56	3-384-895-01	GEAR (R2)	
57	3-384-896-01	GEAR (DOWN)	
58	X-3366-858-3	ARM ASSY, FRICTION	
59	3-384-899-01	SPRING (FRICTION)	
60	3-384-892-01	BEARING (ROLLER)	
61	3-387-776-01	BELT (L)	
62	3-701-438-11	WASHER, 2.5	
63	3-909-408-01	ROLLER (T2)	
64	3-386-150-01	RING (ROLLER), RETAINING	
65	A-3252-591-A	GEAR ASSY, ROLLER	
* 66	X-3366-852-1	CHASSIS (M) ASSY	
67	3-384-923-01	SHAFT (DAMPER)	
68	3-384-916-01	SPRING (FL)	
69	3-384-914-01	DAMPER	
* 70	3-384-915-11	BRACKET (CP)	
* 71	3-384-918-01	RETAINER (DISC)	

Ref. No.	Part No.	Description	Remark
72	3-384-908-11	ARM, CHUCKING	
73	3-906-923-03	GUIDE (DISC 2)	
74	3-384-888-01	SLIDER (L)	
75	3-384-887-01	LEVER (L)	
76	1-650-223-11	SENSOR FLEXIBLE BOARD	
77	A-3222-525-A	SENSOR BOARD, COMPLETE	
* 78	X-3366-854-1	CHASSIS (T) ASSY	
79	3-384-881-02	SPRING (12)	
80	3-384-917-01	SPRING (CH)	
81	3-388-331-01	SPRING (T)	
82	X-3366-102-1	SLIDER (R) ASSY	
* 83	X-3366-853-1	CHASSIS (R) ASSY	
84	3-384-889-01	LEVER (R)	
85	3-384-897-01	GEAR (RACK)	
86	3-384-891-01	LEVER (ST)	
87	3-384-901-06	SHAFT (ROLLER)	
88	3-384-902-02	GEAR (ROLLER)	
89	X-3366-857-3	ARM ASSY, ROLLER	
M903	A-3252-580-A	MOTOR (L) ASSY (LOADING)	
S901	1-692-441-11	MICROSWITCH (DISC DET)	

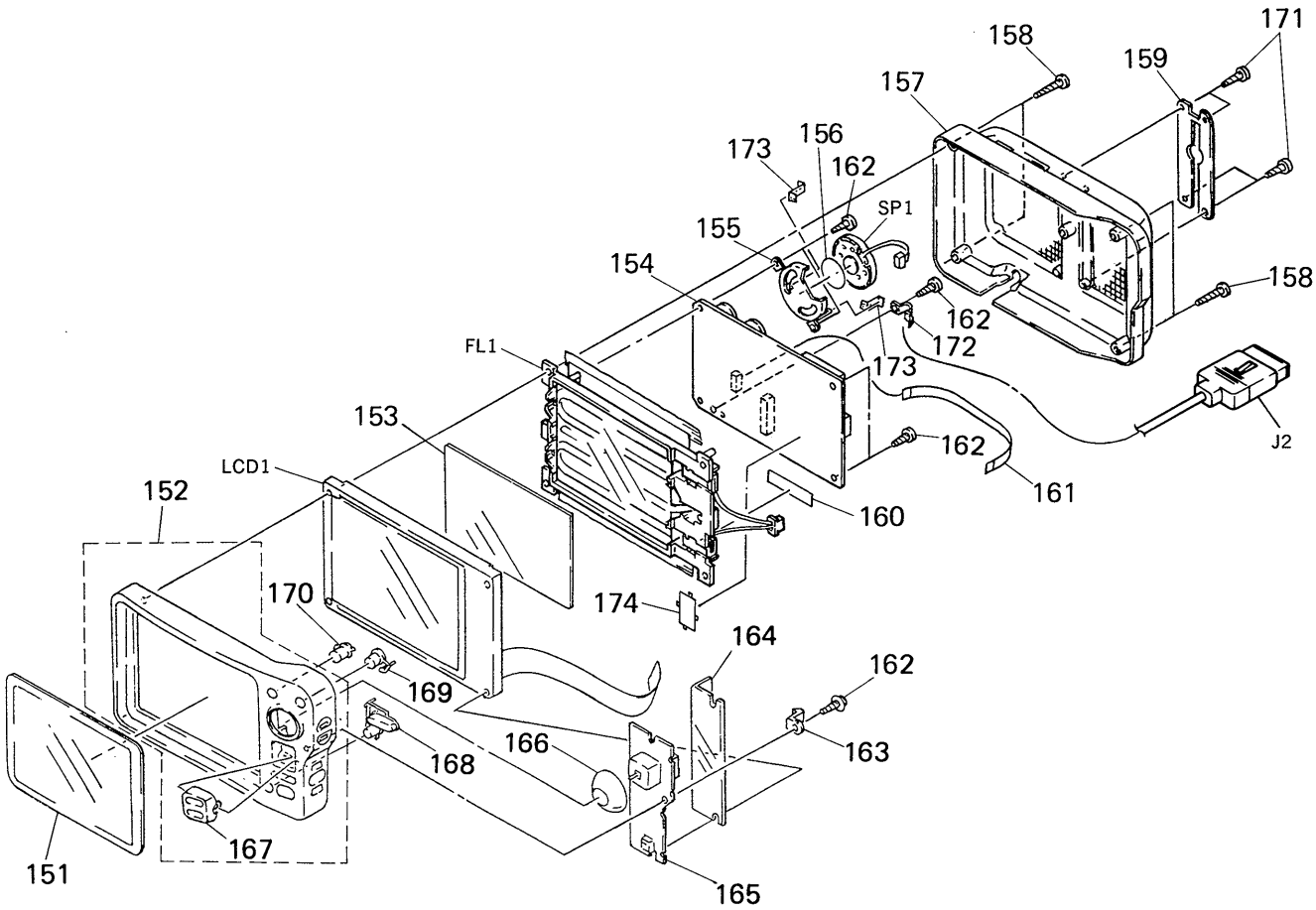
3-3. MECHANISM DECK SECTION-2 (MG-205X-130)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	A-3252-586-A	SHAFT (SL) ASSY	
⚠102	8-848-283-11	PICK-UP OPTICAL KSS-313A	
103	3-384-922-01	GEAR (SL FEED)	
104	3-384-920-01	RETAINER (SL FEED)	
* 105	1-650-144-11	MOTOR BOARD	
106	1-646-402-11	MOTOR FLEXIBLE BOARD	
* 107	X-3366-855-1	CHASSIS (OPT) ASSY (OUTSERT)	
108	X-3366-100-1	BASE (DRIVING) ASSY	
109	3-384-912-01	GEAR (K2)	
110	3-570-615-00	POLY-WASHER (DIA. 1. 2)	
111	3-384-913-11	SPRING (THRUST RETAINER)	
112	3-918-103-11	SCREW (TOOTH) (+P2)	
M901	X-3367-484-1	MOTOR (SPINDLE) ASSY	
M902	A-3252-585-A	MOTOR (SL) ASSY (SLED)	

3-4. MONITOR SECTION



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
151	3-913-724-01	FILTER	
152	X-3368-403-1	PANEL ASSY, FRONT	
* 153	3-909-794-01	ILLUMINATOR	
* 154	A-3298-081-A	MONI BOARD, COMPLETE	
* 155	3-908-904-01	BRACKET (SP)	
156	3-908-908-01	TAPE (SP)	
157	3-913-715-11	PANEL, REAR	
158	3-917-786-01	SCREW (+. PTPWH-2)	
* 159	3-913-726-01	BRACKET (STAND)	
* 160	3-917-468-01	SHEET (LCD)	
161	1-765-349-11	CABLE, FLEXIBLE FLAT	
162	3-669-480-11	+ PTPWH 2	
* 163	3-913-714-01	BRACKET (CLAW)	
* 164	3-913-723-01	SHEET (H), INSULATING	

Ref. No.	Part No.	Description	Remark
* 165	A-3298-093-A	H BOARD, COMPLETE	
166	3-913-716-01	BUTTON (J)	
167	3-913-720-01	BUTTON (ZOOM)	
168	3-913-719-01	BUTTON (P. M)	
169	3-913-717-01	BUTTON (POWER)	
170	3-913-718-01	BUTTON (NAV)	
171	3-906-376-01	SCREW (2. 6X6)	
* 172	3-389-786-01	BRACKET (CORD)	
173	3-831-441-XX	CUSHION, STOPPER	
* 174	3-913-722-01	SHEET (I), INSULATING	
⚠FL1	1-467-689-11	BACK LIGHT UNIT	
J2	1-769-164-11	CORD (WITH CONNECTOR) 16P	
LCD1	1-810-349-21	PANEL MODULE, LIQUID DISPLAY	
SP1	1-503-986-21	SPEAKER	

H **LED SW**

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
*	1-651-716-12	H BOARD			
		*******			
		< CAPACITOR >			
C1	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C2	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C3	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C4	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
C5	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C6	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
		< CONNECTOR >			
CNH1	1-766-210-21	HOUSING, CONNECTOR 8P			
		< DIODE >			
D1	8-719-914-43	DIODE	DAN202K		
D2	8-719-914-43	DIODE	DAN202K		
D3	8-719-984-33	LED	CL-140YG-X (ⓘ)		
D4	8-719-914-43	DIODE	DAN202K		
D5	8-719-422-67	DIODE	MA8062-H		
D6	8-719-422-67	DIODE	MA8062-H		
D7	8-719-422-67	DIODE	MA8062-H		
D8	8-719-422-67	DIODE	MA8062-H		
D9	8-719-422-67	DIODE	MA8062-H		
D10	8-719-422-67	DIODE	MA8062-H		
		< IC >			
IC1	8-759-180-62	IC	uPD6124G-210		
IC2	8-759-515-60	IC	RS-20		
		< TRANSISTOR >			
Q1	8-729-901-05	TRANSISTOR	DTA124EK		
		< RESISTOR >			
R1	1-216-041-00	METAL CHIP	470	5%	1/10W
R2	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R3	1-216-033-00	METAL CHIP	220	5%	1/10W
R4	1-216-295-00	METAL CHIP	0	5%	1/10W
R5	1-216-025-00	METAL CHIP	100	5%	1/10W
R6	1-216-242-00	METAL CHIP	68K	5%	1/8W
R7	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R8	1-216-236-11	METAL GLAZE	39K	5%	1/8W
R9	1-216-236-11	METAL GLAZE	39K	5%	1/8W
R10	1-216-182-00	METAL GLAZE	220	5%	1/8W
R11	1-216-242-00	METAL CHIP	68K	5%	1/8W
R12	1-216-097-00	METAL CHIP	100K	5%	1/10W
R14	1-216-093-00	METAL CHIP	68K	5%	1/10W
R17	1-216-236-11	METAL GLAZE	39K	5%	1/8W
		< SWITCH >			
S1	1-692-386-21	SWITCH (POWER)			
S2	1-692-088-11	SWITCH, TACTILE (INFO +)			
S3	1-692-088-11	SWITCH, TACTILE (INFO -)			
S4	1-692-088-11	SWITCH, TACTILE (MARK)			
S5	1-692-088-11	SWITCH, TACTILE (N/S)			
S6	1-692-088-11	SWITCH, TACTILE (WP)			
S7	1-692-386-21	SWITCH (MENU)			
S8	1-692-386-21	SWITCH (ZOOM ▲)			
S9	1-692-386-21	SWITCH (ZOOM ▼)			
S10	1-692-386-21	SWITCH (POS)			
S11	1-692-386-21	SWITCH (NAV)			
S12	1-692-966-11	SWITCH, CONTROL (PUSH ENTER)			
		< VIBRATOR >			
X1	1-577-093-11	OSCILLATOR, CERAMIC (480kHz)			
**********					
*	1-654-078-11	LED SW BOARD			
		**********			
		< DIODE >			
D601	8-719-050-68	LED	SLR-342PGT32 (POWER)		
		< SWITCH >			
SW601	1-692-016-11	SWITCH, KEY BOARD (RESET)			
SW602	1-692-016-11	SWITCH, KEY BOARD (⏏ EJECT)			
**********					

Ref. No.	Part No.	Description			Remark
*	A-3298-363-A	MAIN BOARD, COMPLETE (US)			
*	A-3298-966-A	MAIN BOARD, COMPLETE (French)			
		**********			
		< LITHIUM BATTERY >			
BATT801	1-528-472-21	BATTERY, LITHIUM			
		< CAPACITOR >			
C203	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C204	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C303	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C304	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C305	1-124-584-00	ELECT	100uF	20%	10V
C401	1-126-944-11	ELECT	3300uF	20%	25V
C402	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C403	1-107-884-11	ELECT	1000uF	20%	16V
C404	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C405	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C406	1-107-884-11	ELECT	1000uF	20%	16V
C407	1-124-589-11	ELECT	47uF	20%	16V
C408	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C410-412					
	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C413	1-124-478-11	ELECT	100uF	20%	25V
C414	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C501	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C502	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C503	1-124-584-00	ELECT	100uF	20%	10V
C504	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C505	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C507	1-124-584-00	ELECT	100uF	20%	10V
C508	1-124-584-00	ELECT	100uF	20%	10V
C509	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C510	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C511	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C601	1-124-903-11	ELECT	1uF	20%	50V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C604	1-126-154-11	ELECT	47uF	20%	6.3V
C605	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C606	1-126-154-11	ELECT	47uF	20%	6.3V
C607	1-164-345-11	CERAMIC CHIP	0.082uF	10%	25V
C608	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C609	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C610	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C611	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C612	1-126-154-11	ELECT	47uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C613	1-126-154-11	ELECT	47uF	20%	6.3V
C614	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C615	1-124-584-00	ELECT	100uF	20%	10V
C616	1-126-154-11	ELECT	47uF	20%	6.3V
C617	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C701	1-163-087-00	CERAMIC CHIP	4PF		50V
C702	1-163-087-00	CERAMIC CHIP	4PF		50V
C703-706					
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C709-713					
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C714	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C715	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C716	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C717	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C719	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C720	1-126-096-11	ELECT	10uF	20%	35V
C721-725					
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C726	1-124-584-00	ELECT	100uF	20%	10V
C727-732					
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C733	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C734	1-124-584-00	ELECT	100uF	20%	10V
C735-738					
	1-126-925-11	ELECT	470uF	20%	10V
C740	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C741	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C801-803					
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C804	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C805	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C806	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C807	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C808	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C809	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C810	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C811	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C812	1-124-584-00	ELECT	100uF	20%	10V
C813	1-124-584-00	ELECT	100uF	20%	10V
C814	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C815	1-163-038-00	CERAMIC CHIP	0.1uF		25V (US)
C903	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C904	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C905	1-126-933-11	ELECT	100uF	20%	16V
C906	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C913	1-126-964-11	ELECT	10uF	20%	50V
C914	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C915	1-126-964-11	ELECT	10uF	20%	50V

MAIN

Ref. No.	Part No.	Description	Remark
C916	1-126-964-11	ELECT 10uF 20% 50V	
		< CONNECTOR >	
CN401	1-569-216-11	CONNECTOR	
CN402	1-764-632-11	PLUG, CONNECTOR	
CN501	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P	
CN502	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
* CN801	1-506-999-11	PIN, CONNECTOR (PC BOARD) 3P	
		< DIODE >	
D301	8-719-422-16	DIODE MA8039-L-TX	
D402	8-719-422-67	DIODE MA8062-H	
D403	8-719-022-90	DIODE MA8160-M	
D404	8-719-422-67	DIODE MA8062-H	
D405	8-719-422-67	DIODE MA8062-H	
D406	8-719-104-34	DIODE 1S2836	
D407	8-719-042-14	DIODE DE5LC20U-TA2	
D408	8-719-104-34	DIODE 1S2836	
D409	8-719-104-34	DIODE 1S2836	
D503	8-719-104-34	DIODE 1S2836	
D801	8-719-988-07	DIODE RB400D	
D804	8-719-988-07	DIODE RB400D	
D805	8-719-988-07	DIODE RB400D	
		< DD CONVERTER >	
DD401	1-467-304-21	CONVERTER UNIT, DC-DC	
		< IC LINK >	
F401	1-532-984-11	LINK, IC (2A)	
F901	1-532-776-21	FUSE, MICRO (SECONDARY) (1A)	
		< FERRITE BEAD >	
FB201-203			
	1-414-235-11	INDUCTOR, FERRITE BEAD	
FB401-403			
	1-410-397-21	FERRITE BEAD INDUCTOR	
		< FILTER >	
FL301	1-239-997-11	FILTER, EMI REMOVAL	
FL701-704			
	1-239-489-11	FILTER, EMI	
FL705	1-239-997-11	FILTER, EMI REMOVAL	
FL706	1-239-997-11	FILTER, EMI REMOVAL	
		< MODULE >	
HIC1	8-814-280-00	MODULE C-4010	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC301	8-759-927-46	IC SN74HC00ANS	
IC302	8-759-275-22	IC SM5875BM-ET	
IC303	8-759-234-20	IC TC7S08F	
IC501	8-759-346-22	IC uPD75517GF-356-3B9	
IC503	8-759-073-82	IC M62007FP	
IC601	8-759-058-45	IC NJM3403AV	
IC602	8-759-080-34	IC TA75W01FU	
IC603	8-759-150-61	IC uPC78L05T	
IC701	8-759-038-92	IC MC68HC000FC16	
IC702	8-752-369-64	IC CXD2928Q	
IC703	8-752-033-07	IC CXA1145M	
IC704-707			
	8-759-160-46	IC TC524256BJ-10-EL	
IC708	8-752-355-05	IC CXK58267AM-70L-T6	
IC709	8-759-346-21	IC TC534200CF-G921 (US)	
IC709	8-759-377-84	IC TC544200F-F160E (French)	
IC710	8-759-177-00	IC HM514260ALJ8Z	
IC711	8-752-351-55	IC CXD2703Q	
IC712	8-759-290-33	IC TC538200AF-G909-EL	
IC801	8-759-290-96	IC HD6435368SW01F (US)	
IC801	8-759-376-84	IC HD6475368SF16-SJ7183 (French)	
IC802	8-752-364-31	IC CXD2919R	
IC803	8-759-199-59	IC RS5C62-E2	
IC804	8-759-243-19	IC TC7SU04F	
IC805	8-759-035-93	IC SC7S32F (US)	
IC901	8-759-245-47	IC TA78L09F-T1	
IC903	8-759-710-86	IC NJM2233BM	
		< COIL >	
L301	1-410-393-11	INDUCTOR CHIP 100uH	
L401	1-421-961-11	COIL, CHOKE 450uH	
L401	1-421-961-41	COIL, CHOKE 450uH	
L501	1-410-393-11	INDUCTOR CHIP 100uH	
L502	1-410-381-11	INDUCTOR CHIP 10uH	
L701	1-410-373-31	INDUCTOR CHIP 2.2uH	
L702	1-410-393-11	INDUCTOR CHIP 100uH	
L801	1-410-381-11	INDUCTOR CHIP 10uH	
L802	1-410-373-31	INDUCTOR CHIP 2.2uH	
		< TRANSISTOR >	
Q201	8-729-920-21	TRANSISTOR DTC314TKH04	
Q401	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q402	8-729-207-58	TRANSISTOR RN1404	
Q403	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q404	8-729-421-22	TRANSISTOR UN2211	
Q405	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q406	8-729-111-14	TRANSISTOR 2SA1385-Z-L	

Ref. No.	Part No.	Description				Remark
Q407	8-729-904-75	TRANSISTOR	DTD114EK			
Q408	8-729-111-14	TRANSISTOR	2SA1385-Z-L			
Q409	8-729-904-75	TRANSISTOR	DTD114EK			
Q501	8-729-207-69	TRANSISTOR	RN2403			
Q502	8-729-207-57	TRANSISTOR	RN1403			
Q503	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q504	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q505	8-729-207-57	TRANSISTOR	RN1403			
Q506	8-729-207-57	TRANSISTOR	RN1403			
Q507	8-729-207-57	TRANSISTOR	RN1403			
Q508	8-729-207-57	TRANSISTOR	RN1403			
		< RESISTOR >				
R201	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R202	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R302	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R401	1-220-274-11	METAL GLAZE	1.2K	5%	1/2W	
R402	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R403	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R404	1-220-150-11	METAL GLAZE	680	10%	1/2W	
R405	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R406	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R407	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R408	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R410	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R411	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R413	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R414	1-216-037-00	METAL CHIP	330	5%	1/10W	
R418	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R501	1-249-385-11	CARBON	2.2	5%	1/6W	
R502	1-216-295-00	METAL CHIP	0	5%	1/10W	
R503	1-216-295-00	METAL CHIP	0	5%	1/10W	
R504	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R505	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R507	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R508	1-216-064-00	METAL CHIP	4.3K	5%	1/10W	
R509	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R510	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R511	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R512-514						
	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R515	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R516	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R517	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R519	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R521	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R522	1-216-103-00	METAL CHIP	180K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R523	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R524	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R525	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R526	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R527	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R529	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R530	1-216-295-00	METAL CHIP	0	5%	1/10W	
R533	1-216-295-00	METAL CHIP	0	5%	1/10W	
R536	1-216-295-00	METAL CHIP	0	5%	1/10W	
R601	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R602	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R603	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R604	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R605	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R606	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R609	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R611	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R612	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R614	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R615	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R701-710						
	1-216-025-00	METAL CHIP	100	5%	1/10W	
R711	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R712	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R713	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R714	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R715	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R716	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R717	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R718	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R719	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R720-722						
	1-216-033-00	METAL CHIP	220	5%	1/10W	
R723	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R724-727						
	1-216-022-00	METAL CHIP	75	5%	1/10W	
R728	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R730	1-216-295-00	METAL CHIP	0	5%	1/10W	(US)
R731	1-216-097-00	METAL CHIP	100K	5%	1/10W	(French)
R733	1-216-295-00	METAL CHIP	0	5%	1/10W	
R734	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R735	1-216-295-00	METAL CHIP	0	5%	1/10W	
R738-740						
	1-216-295-00	METAL CHIP	0	5%	1/10W	
R742	1-216-295-00	METAL CHIP	0	5%	1/10W	
R801	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R807	1-216-097-00	METAL CHIP	100K	5%	1/10W	

MAIN **MONI**

Ref. No.	Part No.	Description			Remark
R808	1-216-049-00	METAL CHIP	1K	5%	1/10W
R809	1-216-049-00	METAL CHIP	1K	5%	1/10W
R810	1-216-121-00	METAL CHIP	1M	5%	1/10W
R811	1-216-047-00	METAL CHIP	820	5%	1/10W
R812	1-216-097-00	METAL CHIP	100K	5%	1/10W
R813	1-216-121-00	METAL CHIP	1M	5%	1/10W
R814	1-216-073-00	METAL CHIP	10K	5%	1/10W
R817	1-216-073-00	METAL CHIP	10K	5%	1/10W (US)
R819	1-216-097-00	METAL CHIP	100K	5%	1/10W
R820	1-216-295-00	METAL CHIP	0	5%	1/10W (French)
R905	1-216-089-00	METAL CHIP	47K	5%	1/10W
R906	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R910	1-216-295-00	METAL CHIP	0	5%	1/10W
		< RF UNIT >			
RF801	1-467-812-21	RF UNIT			
		< SWITCH >			
SW801	1-571-674-11	SWITCH, SLIDE (TX, RX ON/OFF)			
		< THERMISTOR >			
TH501	1-806-715-11	THERMISTOR			
TH502	1-806-715-11	THERMISTOR			
		< VIBRATOR >			
X301	1-567-820-11	VIBRATOR, CRYSTAL (16.934MHz)			
X501	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			
X702	1-760-473-11	VIBRATOR, CRYSTAL (28.63636MHz)			
X703	1-579-695-21	VIBRATOR, CRYSTAL (50MHz)			
X801	1-577-110-11	VIBRATOR, CRYSTAL (20MHz)			
X802	1-579-886-21	VIBRATOR, CRYSTAL (32.768kHz)			

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*	A-3298-081-A	MONI BOARD, COMPLETE			
		**********			
*	3-913-722-01	SHEET (I), INSULATING			
		< CAPACITOR >			
C237	1-126-177-11	ELECT	100uF	20%	10V
C238	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C240	1-164-346-11	CERAMIC CHIP	1uF		16V
C241	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C242	1-126-160-11	ELECT	1uF	20%	50V
C243	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C244	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C245	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C268	1-126-177-11	ELECT	100uF	20%	10V

Ref. No.	Part No.	Description			Remark
C269	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C270	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C271	1-126-177-11	ELECT	100uF	20%	10V
C272	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C273	1-124-122-11	ELECT	100uF	20%	50V
C301	1-126-157-11	ELECT	10uF	20%	16V
C302	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C303	1-126-320-11	ELECT, NONPOLAR	10uF	20%	16V
C304	1-126-157-11	ELECT	10uF	20%	16V
C305	1-124-589-11	ELECT	47uF	20%	16V
C309	1-126-096-11	ELECT	10uF	20%	35V
C311	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C316	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C317	1-135-092-21	TANTALUM CHIP	3.3uF	10%	16V
C320	1-135-179-21	TANTAL. CHIP	2.2uF	10%	16V
C322	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C323	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C324	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C325	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C326	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C327	1-164-346-11	CERAMIC CHIP	1uF		16V
C328	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C329-331					
	1-164-346-11	CERAMIC CHIP	1uF		16V
C332	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C341	1-126-177-11	ELECT	100uF	20%	10V
C373	1-126-177-11	ELECT	100uF	20%	10V
C374	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C375	1-126-157-11	ELECT	10uF	20%	16V
C380-382					
	1-164-346-11	CERAMIC CHIP	1uF		16V
C383	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C384-386					
	1-164-346-11	CERAMIC CHIP	1uF		16V
C601	1-124-122-11	ELECT	100uF	20%	50V
C602	1-164-346-11	CERAMIC CHIP	1uF		16V
C604	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C605	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C606	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C607	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C608	1-124-122-11	ELECT	100uF	20%	50V
C609	1-164-346-11	CERAMIC CHIP	1uF		16V
C611	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C612	1-164-346-11	CERAMIC CHIP	1uF		16V
C613	1-164-346-11	CERAMIC CHIP	1uF		16V
C616	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C618	1-126-177-11	ELECT	100uF	20%	10V
C619	1-126-177-11	ELECT	100uF	20%	10V
C621	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V

Ref. No.	Part No.	Description			Remark
C624	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C627	1-126-157-11	ELECT	10uF	20%	16V
C628	1-126-096-11	ELECT	10uF	20%	35V
C629	1-126-157-11	ELECT	10uF	20%	16V
C630	1-124-122-11	ELECT	100uF	20%	50V
C631	1-126-177-11	ELECT	100uF	20%	10V
C632	1-126-177-11	ELECT	100uF	20%	10V
C633	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C634	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C635	1-164-346-11	CERAMIC CHIP	1uF		16V
C636	1-164-346-11	CERAMIC CHIP	1uF		16V
C640	1-124-122-11	ELECT	100uF	20%	50V
C701	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C702	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C703	1-124-122-11	ELECT	100uF	20%	50V
C704	1-164-346-11	CERAMIC CHIP	1uF		16V
C705	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C707	1-130-781-00	FILM	0.22uF	10%	100V
C708	1-126-163-11	ELECT	4.7uF	20%	50V
C709	1-126-163-11	ELECT	4.7uF	20%	50V
C710	1-109-850-11	CERAMIC	27PF	5%	3KV
C711	1-109-850-11	CERAMIC	27PF	5%	3KV
C712	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C713	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C720	1-162-638-11	CERAMIC CHIP	1uF		16V
		< CONNECTOR >			
CN1	1-766-212-11	PIN, CONNECTOR 12P			
CN2	1-766-211-11	PIN, CONNECTOR 4P			
CN3	1-766-324-11	CONNECTOR, FFC/FPC (ZIF) 8P			
CN4	1-766-214-11	CONNECTOR, FFC/FPC (ZIF) 24P			
CN5	1-766-213-11	PIN, CONNECTOR			
* CN6	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P			
CN7	1-566-757-11	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D301	8-719-106-08	DIODE	RD6.2M-B2		
D302	8-719-106-08	DIODE	RD6.2M-B2		
D303	8-719-106-08	DIODE	RD6.2M-B2		
D304	8-719-106-44	DIODE	RD9.1M-B2		
D312	8-719-106-23	DIODE	RD7.5M-B2		
D313	8-719-106-23	DIODE	RD7.5M-B2		
D314	8-719-106-23	DIODE	RD7.5M-B2		
D315	8-719-914-43	DIODE	DAN202K		
D604	8-719-801-78	DIODE	1SS184		
D605	8-719-801-78	DIODE	1SS184		
D606	8-719-801-78	DIODE	1SS184		
D609	8-719-105-90	DIODE	RD5.6M-B1		
D610	8-719-106-89	DIODE	RD15M-B2		

Ref. No.	Part No.	Description		Remark
D701	8-719-026-42	DIODE	SFPB-74	
D703	8-719-914-43	DIODE	DAN202K	
D704	8-719-914-43	DIODE	DAN202K	
D705	8-719-106-53	DIODE	RD10M-B2	
D706	8-719-106-89	DIODE	RD15M-B2	
D707	8-719-914-43	DIODE	DAN202K	
		< FUSE >		
F201	1-533-271-21	FUSE, CHIP (0.5A)		
F601	1-533-271-21	FUSE, CHIP (0.5A)		
F701	1-533-380-21	FUSE, CHIP (1A)		
		< FERRITE BEAD >		
FB608	1-543-813-21	FILTER, EMI		
FB701	1-410-396-41	FERRITE BEAD INDUCTOR 0.45uH		
		< IC >		
IC300	8-759-633-73	IC	M51406FP	
IC301	8-759-083-11	IC	LA7217M	
IC302	8-759-712-06	IC	NJM386BD	
IC601	8-759-972-76	IC	TL1453CNS	
IC603	8-759-209-54	IC	TC4S01F	
IC701	8-759-906-22	IC	MB3759PF	
		< COIL >		
L201	1-412-064-11	INDUCTOR CHIP	100uH	
L302	1-412-064-11	INDUCTOR CHIP	100uH	
L601	1-424-665-11	COIL, CHOKE		
L602	1-410-150-21	INDUCTOR	47uH	
L603-605	1-412-064-11	INDUCTOR CHIP	100uH	
L607	1-412-058-11	INDUCTOR CHIP	10uH	
L608	1-412-064-11	INDUCTOR CHIP	100uH	
L701	1-424-665-11	COIL, CHOKE		
		< TRANSISTOR >		
Q214	8-729-921-49	TRANSISTOR	2SD1760F5-R	
Q216	8-729-901-00	TRANSISTOR	DTC124EK	
Q219	8-729-901-00	TRANSISTOR	DTC124EK	
Q304	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q305	8-729-901-00	TRANSISTOR	DTC124EK	
Q306	8-729-216-22	TRANSISTOR	2SA1162-G	
Q307	8-729-216-22	TRANSISTOR	2SA1162-G	
Q308	8-729-216-22	TRANSISTOR	2SA1162-G	
Q309	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q310	8-729-920-53	TRANSISTOR	FMY1	
Q311	8-729-901-00	TRANSISTOR	DTC124EK	
Q312	8-729-901-00	TRANSISTOR	DTC124EK	

MONI

Ref. No.	Part No.	Description				Remark
Q313	8-729-901-00	TRANSISTOR	DTC124EK			
Q314	8-729-901-05	TRANSISTOR	DTA124EK			
Q315	8-729-920-74	TRANSISTOR	2SC2412K-QR			
Q601	8-729-823-84	TRANSISTOR	FP102			
Q602	8-729-216-22	TRANSISTOR	2SA1162-G			
Q609	8-729-017-74	TRANSISTOR	2SK1717			
Q701	8-729-920-53	TRANSISTOR	FMY1			
Q703	8-729-025-72	TRANSISTOR	2SJ279(S)TL			
Q704	8-729-202-37	TRANSISTOR	2SC3303-Y			
Q705	8-729-202-37	TRANSISTOR	2SC3303-Y			
Q706	8-719-048-59	TRANSISTOR	03P2J-E1			
Q707	8-729-025-72	TRANSISTOR	2SJ279(S)TL			
Q708	8-729-901-00	TRANSISTOR	DTC124EK			
Q709	8-729-920-74	TRANSISTOR	2SC2412K-QR			
		< RESISTOR >				
R261	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R266	1-216-001-00	METAL CHIP	10	5%	1/10W	
R267	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R268	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R269	1-216-295-00	METAL CHIP	0	5%	1/10W	
R275	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R276	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R277	1-216-043-00	METAL CHIP	560	5%	1/10W	
R280	1-216-041-00	METAL CHIP	470	5%	1/10W	
R304	1-216-041-00	METAL CHIP	470	5%	1/10W	
R305	1-216-017-00	METAL CHIP	47	5%	1/10W	
R306	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R307	1-216-017-00	METAL CHIP	47	5%	1/10W	
R309	1-216-017-00	METAL CHIP	47	5%	1/10W	
R310	1-216-013-00	METAL CHIP	33	5%	1/10W	
R311	1-216-017-00	METAL CHIP	47	5%	1/10W	
R312	1-216-013-00	METAL CHIP	33	5%	1/10W	
R313-315						
	1-216-017-00	METAL CHIP	47	5%	1/10W	
R316	1-216-033-00	METAL CHIP	220	5%	1/10W	
R330	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R331	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R332	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R333	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R336	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R337	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R338	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R339	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R341	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R342	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R343	1-216-043-00	METAL CHIP	560	5%	1/10W	
R346	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R350	1-216-027-00	METAL CHIP	120	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R351	1-216-033-00	METAL CHIP	220	5%	1/10W	
R352	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R353	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R354	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R357	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R358	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R359	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R360	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R364-366						
	1-216-037-00	METAL CHIP	330	5%	1/10W	
R367-369						
	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R370	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R371	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R372	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R373	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R374	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R375	1-216-047-00	METAL CHIP	820	5%	1/10W	
R376	1-216-021-00	METAL CHIP	68	5%	1/10W	
R377	1-216-047-00	METAL CHIP	820	5%	1/10W	
R378	1-216-021-00	METAL CHIP	68	5%	1/10W	
R379	1-216-047-00	METAL CHIP	820	5%	1/10W	
R380	1-216-021-00	METAL CHIP	68	5%	1/10W	
R381	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R382	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R383	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R384	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R392	1-216-029-00	METAL CHIP	150	5%	1/10W	
R394	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R395	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R397	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R607	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R608	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R609	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R610	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R611	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R612	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R613	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R614	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R615	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R616	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R617	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R618	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R625	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R626	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R628	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R630	1-216-001-00	METAL CHIP	10	5%	1/10W	
R631	1-216-295-00	METAL CHIP	0	5%	1/10W	

Ref. No.	Part No.	Description			Remark
R632	1-216-025-00	METAL CHIP	100	5%	1/10W
R633	1-216-009-00	METAL CHIP	22	5%	1/10W
R634	1-216-041-00	METAL CHIP	470	5%	1/10W
R636	1-216-049-00	METAL CHIP	1K	5%	1/10W
R637	1-216-073-00	METAL CHIP	10K	5%	1/10W
R638	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R640	1-216-041-00	METAL CHIP	470	5%	1/10W
R701	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R702	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R703	1-216-073-00	METAL CHIP	10K	5%	1/10W
R704	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R705	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R706	1-216-009-00	METAL CHIP	22	5%	1/10W
R707	1-216-009-00	METAL CHIP	22	5%	1/10W
R708	1-216-001-00	METAL CHIP	10	5%	1/10W
R709	1-216-077-00	METAL CHIP	15K	5%	1/10W
R710	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R711	1-216-049-00	METAL CHIP	1K	5%	1/10W
R712	1-216-049-00	METAL CHIP	1K	5%	1/10W
R714	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R715	1-216-009-00	METAL CHIP	22	5%	1/10W
R716	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R717	1-216-049-00	METAL CHIP	1K	5%	1/10W
R718	1-216-049-00	METAL CHIP	1K	5%	1/10W
R719	1-216-029-00	METAL CHIP	150	5%	1/10W
R720	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R721	1-216-049-00	METAL CHIP	1K	5%	1/10W
R722	1-216-049-00	METAL CHIP	1K	5%	1/10W
R723	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R724	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R731	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R732	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R733	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R734	1-216-295-00	METAL CHIP	0	5%	1/10W
		< VARIABLE RESISTOR >			
RV300	1-238-092-11	RES, ADJ, CERMET	47K		
RV301	1-238-086-11	RES, ADJ, CERMET	470		
RV302	1-238-092-11	RES, ADJ, CERMET	47K		
RV303	1-238-092-11	RES, ADJ, CERMET	47K		
RV304	1-238-092-11	RES, ADJ, CERMET	47K		
RV305	1-238-092-11	RES, ADJ, CERMET	47K		
RV306	1-223-551-11	RES, VAR, CARBON (WITH KNOB)	20K (BRIGHT)		
RV307	1-223-550-11	RES, VAR, CARBON (WITH KNOB)	10K (VOL)		
RV310	1-238-091-11	RES, ADJ, CERMET	22K		
RV311	1-238-090-11	RES, ADJ, CERMET	10K		
RV601	1-238-089-11	RES, ADJ, CERMET	4.7K		
RV602	1-238-089-11	RES, ADJ, CERMET	4.7K		

Ref. No.	Part No.	Description			Remark
		< TRANSFORMER >			
T602	1-426-787-11	TRANSFORMER, DC-DC CONVERTER			
T701	1-426-788-11	TRANSFORMER, INVERTER			
T702	1-426-788-11	TRANSFORMER, INVERTER			
		< THERMISTOR >			
TH701	1-810-216-11	THERMISTOR, CHIP			
		< VIBRATOR >			
X301	1-577-155-11	VIBRATOR, CERAMIC (500kHz)			
**********					
*	1-650-144-11	MOTOR BOARD			
		**********			
		< CONNECTOR >			
* CNJ303	1-750-160-21	CONNECTOR, FPC 7P			
		< SWITCH >			
S301	1-572-467-21	SWITCH, PUSH (1 KEY) (LIMIT)			
**********					
	A-3222-525-A	SENSOR BOARD, COMPLETE			
		**********			
		< DIODE >			
D801	8-719-045-75	LED CL-200IR-X-TU			
D802	8-719-045-75	LED CL-200IR-X-TU			
		< RESISTOR >			
R801	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R802	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
		< SWITCH >			
S901	1-692-441-11	MICROSWITCH (DISC DET)			
**********					
*	A-3295-950-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C2	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C3	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C4	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C5	1-126-204-11	ELECT CHIP	47uF	20%	16V
C7	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C8	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

SERVO

Ref. No.	Part No.	Description			Remark
C9	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C10	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C11	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C12	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C13	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C14	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C15	1-126-191-11	ELECT	0.47uF	20%	50V
C16	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C17	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C18	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C20	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C21	1-164-346-11	CERAMIC CHIP	1uF		16V
C22	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C23	1-164-346-11	CERAMIC CHIP	1uF		16V
C24-26					
	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C27	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C28	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C30-32					
	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C34	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C35	1-126-204-11	ELECT CHIP	47uF	20%	16V
		< CONNECTOR >			
CNJ1	1-565-728-11	CONNECTOR, FPC 17P			
* CNJ2	1-750-159-21	CONNECTOR, FPC 5P			
* CNJ3	1-750-160-21	CONNECTOR, FPC 7P			
CNJ4	1-764-616-23	HOUSING, CONNECTOR (PC BOARD) 30P			
* CNP1	1-580-055-21	PIN, CONNECTOR 2P			
		< IC >			
IC1	8-752-059-30	IC CXA1610M			
IC2	8-752-351-94	IC CXD2515Q			
IC3	8-759-823-87	IC LB1638M			
IC4	8-759-925-72	IC SN74HC02ANS			
IC5	8-759-087-55	IC MPC1732MR2			
IC6	8-759-087-53	IC MPC1730MR2			
		< COIL >			
L1	1-412-058-11	INDUCTOR CHIP	10uH		
L3	1-412-058-11	INDUCTOR CHIP	10uH		
L4	1-412-058-11	INDUCTOR CHIP	10uH		
		< TRANSISTOR >			
Q1	8-729-024-26	PHOTO TRANSISTOR CPT-181S-C-TU			
Q2	8-729-024-26	PHOTO TRANSISTOR CPT-181S-C-TU			
Q5	8-729-141-48	TRANSISTOR 2SB624-BV345			

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R1	1-216-024-00	METAL GLAZE	91	5%	1/10W
R2	1-216-001-00	METAL CHIP	10	5%	1/10W
R4	1-216-077-00	METAL CHIP	15K	5%	1/10W
R5	1-216-073-00	METAL CHIP	10K	5%	1/10W
R6	1-216-073-00	METAL CHIP	10K	5%	1/10W
R7	1-216-099-00	METAL CHIP	120K	5%	1/10W
R8	1-216-081-00	METAL CHIP	22K	5%	1/10W
R9	1-216-075-00	METAL CHIP	12K	5%	1/10W
R10	1-216-075-00	METAL CHIP	12K	5%	1/10W
R11	1-216-083-00	METAL CHIP	27K	5%	1/10W
R12	1-216-077-00	METAL CHIP	15K	5%	1/10W
R13	1-216-077-00	METAL CHIP	15K	5%	1/10W
R14	1-216-097-00	METAL CHIP	100K	5%	1/10W
R15	1-216-085-00	METAL CHIP	33K	5%	1/10W
R16	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R17	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R18	1-216-073-00	METAL CHIP	10K	5%	1/10W
R19	1-216-121-00	METAL CHIP	1M	5%	1/10W
R20	1-216-097-00	METAL CHIP	100K	5%	1/10W
R21	1-216-073-00	METAL CHIP	10K	5%	1/10W
R22-24					
	1-216-033-00	METAL CHIP	220	5%	1/10W
R25	1-216-073-00	METAL CHIP	10K	5%	1/10W
R32	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VARIABLE RESISTOR >			
RV1	1-238-091-11	RES, ADJ, CERMET	22K		
RV2	1-238-091-11	RES, ADJ, CERMET	22K		
		< SWITCH >			
SW1	1-571-754-31	SWITCH, PUSH (1 KEY) (DISC SET)			

****

MISCELLANEOUS

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9	1-690-989-61	CORD (WITH CONNECTOR)
76	1-650-223-11	SENSOR FLEXIBLE BOARD
⚠102	8-848-283-11	PICK-UP OPTICAL KSS-313A
106	1-646-402-11	MOTOR FLEXIBLE BOARD
161	1-765-349-11	CABLE, FLEXIBLE FLAT
F1	1-532-421-00	FUSE (5A)
F2	1-532-360-XX	FUSE (1A)
⚠FL1	1-467-689-11	BACK LIGHT UNIT
J2	1-769-164-11	CORD (WITTH CONNECTOR) 16P
LCD1	1-810-349-21	PANEL MODULE, LIQUID DISPLAY
M901	X-3367-484-1	MOTOR (SPINDLE) ASSY
M902	A-3252-585-A	MOTOR (SL) ASSY (SLED)

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
M903	A-3252-580-A	MOTOR (L) ASSY (LOADING)	
SP1	1-503-986-21	SPEAKER	

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HARDWARE LIST

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#1	7-621-773-95	SCREW +B 2.6X6	
#2	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
#3	7-627-553-18	SCREW, PRECISION +P 2X2	
#4	7-621-255-25	SCREW +P 2X4	
#6	7-627-553-67	SCREW, PRECISION +P 2X5	
#7	7-621-772-60	SCREW +B 2X12	
#8	7-627-553-37	SCREW, PRECISION +P 2X3	
#9	7-627-552-07	SCREW, PRECISION +P 1.7X2.5	
#10	7-627-552-47	SCREW, PRECISION +P 1.7X4	

****

ACCESSORIES & PACKING MATERIALS

****

	1-467-724-11	REMOTE COMMANDER (RM-X52)
	1-467-813-11	ANTENNA UNIT (VCA-24)
	1-467-813-21	ANTENNA UNIT (VCA-23)
	3-759-706-11	MANUAL, INSTRUCTION (FRENCH) (French)
	3-759-706-21	MANUAL, INSTRUCTION (ENGLISH) (US)
	3-759-949-11	MANUAL, INSTRUCTION, INSTALL (FRENCH) (French)
	3-759-949-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH) (US)
	3-915-929-01	CD-ROM DISC (US)
	3-915-929-11	CD-ROM DISC (French)
	9-905-908-01	CASE, BATTERY (for RM-X52)

****

MOUNTING HARDWARE

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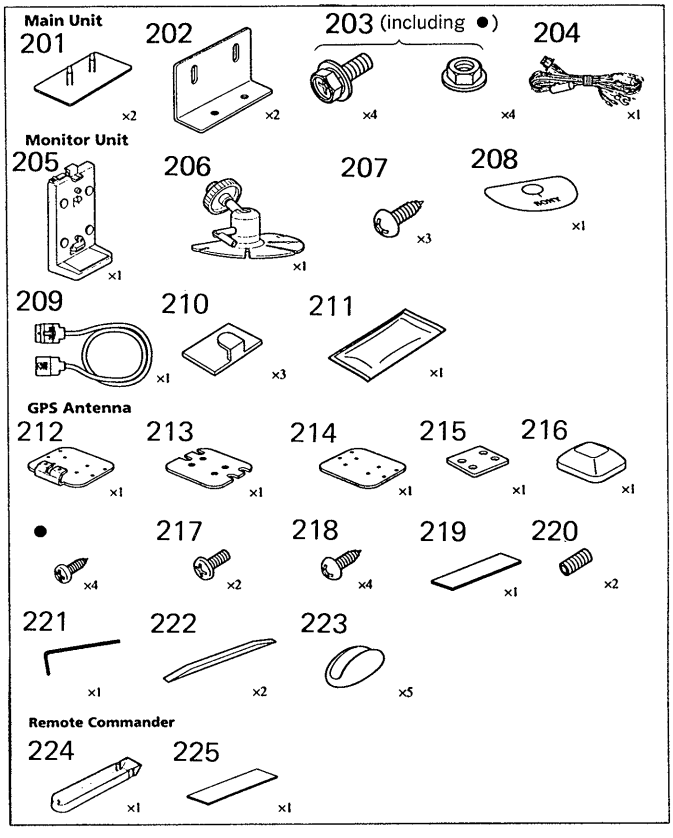
201	X-3366-914-1	BRACKET ASSY	
* 202	3-379-408-11	BRACKET (S)	
203	X-3369-691-1	SCREW ASSY	
204	1-690-989-61	CORD (WITH CONNECTOR) (POWER)	
205	X-3368-495-1	ADAPTOR ASSY	
206	X-3368-989-1	STAND ASSY	
207	7-685-161-01	SCREW +P 4X12 TYPE4	
208	3-908-906-01	COVER (STAND)	
209	1-769-129-11	CORD (MONITOR EXTENSION)	
210	3-389-594-01	CLAMP, CORD	
211	NOT SUPPLIED		
212	3-904-425-01	BRACKET (T)	
213	3-904-426-01	SHEET (T)	
214	3-916-779-01	BRACKET (ANT)	
215	3-917-487-01	CUSHION (FIXED)	
216	NOT SUPPLIED		
217	3-917-837-01	SCREW (+B 2.6X5)	
218	NOT SUPPLIED		
219	3-904-439-01	SPACER (ANT)	
220	NOT SUPPLIED		
221	NOT SUPPLIED		
222	3-372-695-01	CUSHION (WATERPROOF)	
223	3-371-710-01	CLAMP, CABLE	
224	9-905-307-01	HOLDER	
225	3-904-934-01	TAPE (HOLDER)	



5. TEST MODES

This set offers three test modes: Test Mode 1, Test Mode 2 and Test Mode 3. The Test Mode 3 is used for service.
The Test Mode 3 can be used to play the CD adjustment disc YEDS-18 and to display the error code.

Setting the Test Mode 3

Method 1: Connect each of pin ㉟ ($\overline{\text{TEST 1}}$) and pin ㉞ ($\overline{\text{TEST 2}}$) of IC501 on the main board to GND. Push the RESET key.

Method 2: Hold down the POWER key on the monitor and push the RESET key on the CD-ROM, then push the MARK key on the remote commander and release the POWER key.

Releasing the Test Mode 3

If Method 1 was used: Disconnect the pins from GND. Connect and disconnect ACC to and from backup battery.

If Method 2 was used: Connect and disconnect ACC to and from backup battery.

Operation in Test Mode 3

Remote commander key	Action
Cursor △	CD PLAY/PAUSE
Cursor ▽	CD STOP
Cursor ▷	AMS ▶▶▮
Cursor ◁	AMS ▮◀◀
ZOOM △	CUE ▶▶
ZOOM ▽	REV ◀◀
NAV	Each touch provides AMS (Auto Music Sensor) operation. YEDS-18 → 2 → 5 → 7 → 8 →10→13→
MARK	Each touch turns tracking servo ON/OFF.

In Test Mode 3, for handling of any focus error, focus search is repeated (no focus error will be generated).

Key Test

When each of the keys is pushed, a beep is heard.

S RAM Initialization

Press the MENU key for 2 seconds and push the WP key to initialize the S RAM. All its data such as wait points and marks will be cleared.

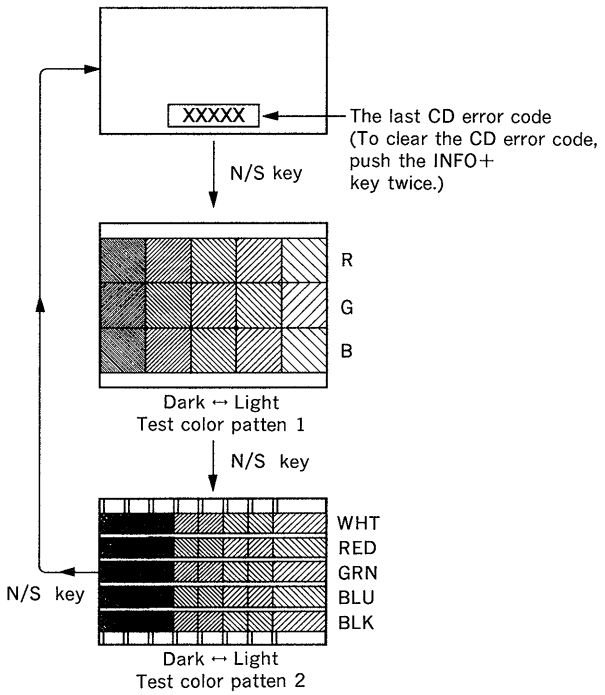
GPS Cold Start

Press the WP key for 2 seconds and push the MENU key to cold start the GPS. Its almanac data will be forgotten.

Screen Test

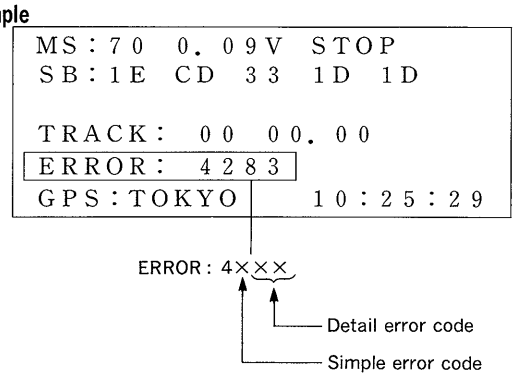
The screen test on the monitor can be performed.

Each time the N/S key is pressed, the screen changes from one to another.



CD Error Code

Display Example



(1) Simple error code

0	–
1	–
2	Focus error (servo system error)
3	–
4	–
5	–
6	–
7	–
8	TOC read error (servo system error)
9	–
A	–
B	–
C	–
D	Temperature protection error (no detail code: always 00h)
E	MD error (MD system error)
F	MD give-up error (MD system error)

(2) Detail Error Code

Servo System Errors

Upper Bytes

1×	Error occurred when TOC read had not been completed yet
8×	Error after TOC read was completed (during processing of SEEK command)
9×	Error after TOC read was completed (during processing of CD-ROM command)
A×	Error after TOC read was completed (during processing of AUDIO command)
B×	Error after TOC read was completed (during processing of TMACK command)

Lower Bytes

×1	FOCUS error (Retry did not turn FOCUS ON)
×3	GFS error (Retry did not turn GFS ON)
×4	CRCF error (CRCF counter was incremented to maximum)
×E	TRACK JUMP (MOVE) (Retry exceeded 8 times)
×F	MAX TIME OVER during TOC read or during processing of a command

MD System Errors

Upper Bytes

1×	Error when loading
2×	Error when resetting and initializing
6×	Error when ejecting

Lower Bytes

×0	Limit switch not allowed to be set ON
×1	Limit switch not allowed to be set OFF
×2	Irregular disc
×3	PH4 not allowed to be set "L" (Not used)
×4	PH3 not allowed to be set "L" (Not used)
×5	PH2 not allowed to be set "L"
×6	PH1 not allowed to be set "L"
×7	D switch not allowed to be set OFF
×8	PH4 not allowed to be set "H" (Not used)
×9	PH3 not allowed to be set "H" (Not used)
×A	PH2 not allowed to be set "H"
×B	PH1 not allowed to be set "H"
×C	D witch not allowed to be set ON
×D	PH2 and D switch set ON at the same time
×F	MAX Time Over

Note that some of these error codes may be displayed during normal operation.

Display Examples

Internal temperature rise error

Temperature protection circuit was operated. 4D00

Error associated with loading/eject

System error. Push RESET key. 4F1C

Error associated with disc

Disc error
4283

CD Error Code List

Error code	Contents	Possible cause
4281 4291 42A1 42B1	Focus NG occurred after TOC read was completed (Focus retry did not allow OK)	• Damage and/or contamination to disc • Fault in optical pick-up • Fault in servo board • Fault in IC302 • Fault in TH501 and/or TH502 • Fault in CN501 • Fault in IC501 (pins ⑰, ㉑, ㉒, ㉓, ㉕, ㊽, ㊿, ㊿①, ㊿②, ⑦⑨, ⑧⓪)
4283 4293 42A3 42B3	GFS NG occurred after TOC read was completed (Focus retry did not allow OK)	• Damage and/or contamination to disc • Fault in optical pick-up • Fault in servo board • Fault in TH501 and/or TH502 • Fault in CN501 • Fault in IC501 (pin ⑳) • Spindle motor • Thread motor
4284 4294 42A4 42B4	CRCF NG occurred after TOC read was completed (Focus position change did not allow OK)	• Damage and/or contamination to disc • Fault in servo board • Fault in CN501 • Fault in IC501 (pin ⑰)

Error code	Contents	Possible cause
428E 429E 42AE 42BE	Traffic Jump (Move) occurred after TOC read was completed (Retry did not allow OK)	• Damage and/or contamination to disc • Fault in optical pick-up • Fault in servo board • Fault in IC302 • Fault in CN501 • Fault in IC501 (pins ㉒, ㉓, ㊿, (51), (52))
428F 429F 42AF 42BF	Command NG occurred after TOC read was completed (The processing of the command was not completed after elapse of 10 seconds)	• Fault in servo board • Fault in CN501 • Fault in IC501 (pins ㉒, ㉓, ㊿, (51), (52))
4811	Focus NG occurred when TOC read was not yet completed (Focus retry did not allow OK)	• Damage and/or contamination to disc • Fault in optical pick-up • Fault in servo board • Fault in IC302 • Fault in TH501 and/or TH502 • Fault in CN501 • Fault in IC501 (pins (17), (21), ㉒, ㉓, ㉕, (48), ㊿, (51), (52), (79), (80))
4813	GFS NG occurred when TOC read had not been completed yet (Focus retry did not allow OK)	• Damage and/or contamination to disc • Fault in optical pick-up • Fault in servo board • Fault in TH501 and/or TH502 • Fault in CN501 • Fault in IC501 (pin ⑳) • Spindle motor • Thread motor
4814	CRCF NG occurred when TOC read had not been completed yet (Focus position change did not allow OK)	• Damage and/or contamination to disc • Fault in servo board • Fault in CN501 • Fault in IC501 (pin (17))
481E	Traffic Jump (Move) occurred when TOC read had not been completed yet (Retry did not allow OK)	• Damage and/or contamination to disc • Fault in optical pick-up • Fault in servo board • Fault in IC302 • Fault in CN501 • Fault in IC501 (pins ㉒, ㉓, ㊿, (51), (52))
481F	Command NG occurred when TOC read had not been completed yet (The processing of the command was not completed after elapse of 10 seconds)	• Fault in servo board • Fault in CN501 • Fault in IC501 (pins ㉒, ㉓, ㊿, (51), (52))
4D00	Internal temperature too high	• The internal temperature over 85°C • Fault in TH501 and/or TH502 • Fault in IC501 (pins ②, (73), (78), (79))
4E66	• PH1 failure detected when ejecting • PH1 error • PH1 not allowed to be set from "H" to "L"	• Foreign material other than disc • Fault in PH1 • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (77)) • Loading motor
4E67	• D switch failure detected when ejecting • D switch error • D switch not allowed to be set from "H" to "L"	• Foreign material other than disc • Fault in D switch • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (72)) • Loading motor
4E6F	• Ejection not completed after elapse of 10 seconds or more	• Foreign material other than disc • Fault in PH2 • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (76)) • Loading motor

Error code	Contents	Possible cause
4F1B	• PH1 failure detected when loading • PH1 error • PH1 not allowed to be set from "L" to "H"	• Foreign material other than disc • Fault in PH1 • Fault in PH2 • Fault in D switch • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (72), (76), (77)) • Loading motor
4F1C	• D switch failure detected when loading • D switch error • D switch not allowed to be set from "L" to "H"	• Foreign material other than disc • Fault in PH1 • Fault in PH2 • Fault in D switch • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (72), (76), (77)) • Loading motor
4F1D	• D switch failure detected when loading • D switch error • D switch and PH2 were set "H" at the same time	• Foreign material other than disc • Fault in PH2 • Fault in D switch • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (72), (76)) • Loading motor
4F1F	• Loading not completed after elapse of 10 seconds or more	• Foreign material other than disc • Fault in PH2 • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (76)) • Loading motor
4F26	• PH1 failure detected when initial ejecting • PH1 error • PH1 not allowed to be set from "H" to "L"	• Foreign material other than disc • Fault in PH1 • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (77)) • Loading motor
4F27	• D switch failure detected when initial ejecting • D switch error • D switch not allowed to be set from "H" to "L"	• Foreign material other than disc • Fault in D switch • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (72)) • Loading motor
4F2B	• PH1 failure detected when initial loading • PH1 error • PH1 not allowed to be set from "L" to "H"	• Foreign material other than disc • Fault in PH1 • Fault in PH2 • Fault in D switch • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (72), (76), (77)) • Loading motor
4F2C	• D switch failure detected when initial loading • D switch error • D switch not allowed to be set from "L" to "H"	• Foreign material other than disc • Fault in PH1 • Fault in PH2 • Fault in D switch • Fault in CN501 • Fault in IC501 (pins ⑦, ⑧, (72), (76), (77)) • Loading motor
4F2F	• Initial processing not completed after elapse of 10 seconds	• Foreign material other than disc. • Fault in PH1 • Fault in PH2 • Fault in D switch • Fault in CN501 • Fault in IC501 (pins ⑧, (76), (77)) • Loading motor

6. ELECTRICAL ADJUSTMENTS

CD ROM SECTION

Notes for Adjustment and Check

1. These adjustments and checks are performed in the sequence that they are described.
2. The disc is used only when the "YEDS-18", parts No. 3-702-101-01 is specified.

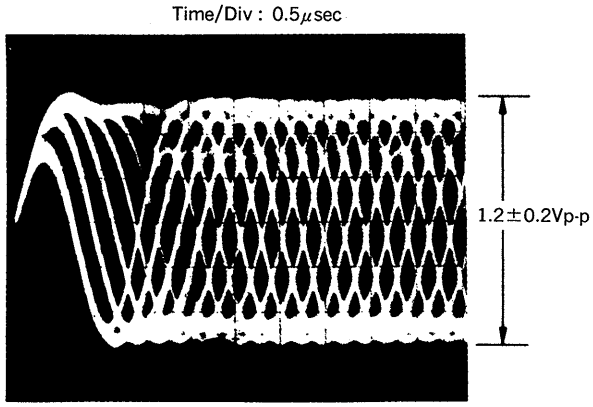
Focus Bias Adjustment

Setting : The set is placed in a horizontal position for this adjustment.

Procedure :

1. Enter Test Mode 3. (See page 60.)
2. Connect an oscilloscope between TP (RF) and TP (RF GND) on the servo board.
3. Load the disc (YEDS-18) and push is the cursor △ (▶ ❚❚) key on the remote commander to play.
4. Adjust RV2 so that the waveform appearing on the oscilloscope is maximized and has a clean eye pattern. (The "clean eye pattern" means that diamond shapes can be clearly distinguished in the center of the waveform.)

Volt/Div : 200mV
Time/Div : 0.5μsec



Adjustment Location : servo board (side B)

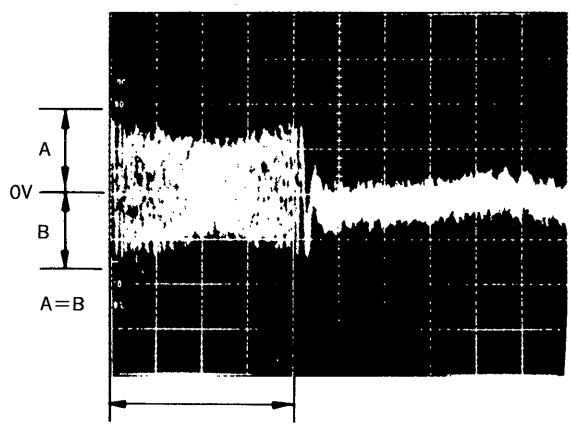
Tracking Balance Adjustment

Setting : The set is placed in a horizontal position for this adjustment.

Procedure :

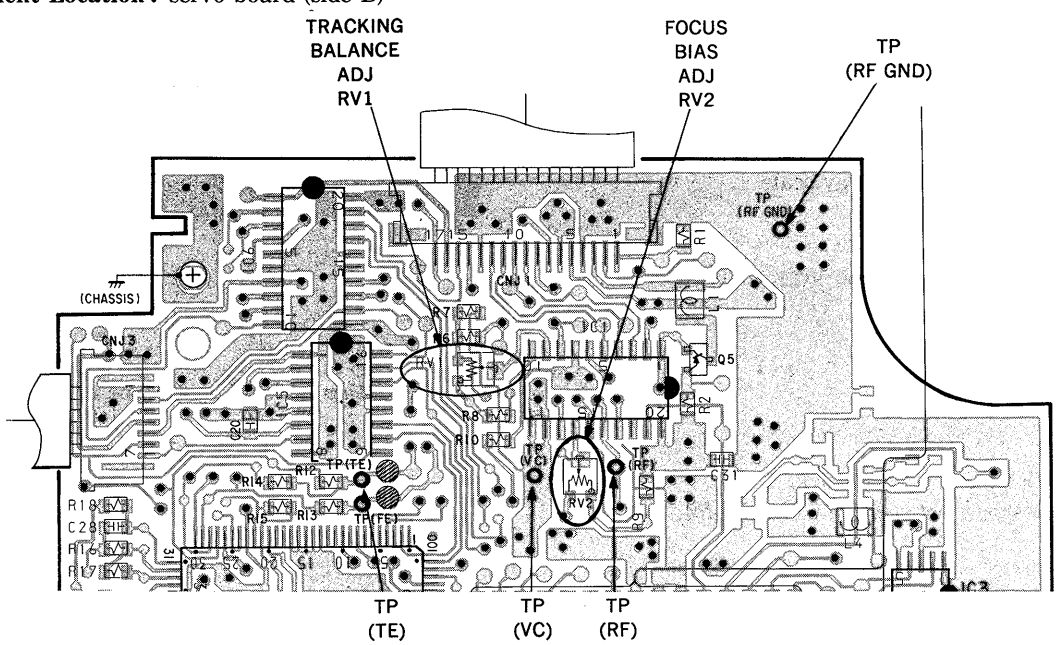
1. Enter Test Mode 3. (See page 60.)
2. Connect an oscilloscope between TP (TE) and TP (VC) on the servo board.
3. Load the disc (YEDS-18) and push the cursor △ (▶ ❚❚) key on the remote commander to play.
4. Push the cursor ◁ (⏮) or cursor ▷ (⏭) (alternately ZOOM △ (◀◀) or ZOOM ▽ (▶▶)) key and check the traverse waveform.
5. Adjust RV1 so that the traverse waveform is symmetrical with the level at a center.

Volt/Div : 0.5V
Time/Div : 2msec
Center 0V



Traverse waveform
(100 track jump waveform)

* Traverse waveform : Tracking error waveform which appears when traversing tracks.



MONITOR SECTION

POWER SUPPLY VOLTAGE ADJUSTMENTS

5V Adjustment

Procedure :

1. Connect the digital voltmeter to between TP1 and GND.
2. Adjust RV602 for 5±0.1V reading on digital voltmeter.

Adjustment Location : MONI board (See page 66.)

12V Adjustment

Procedure :

1. Connect the digital voltmeter to between TP4 and GND.
2. Adjust RV601 for 12±0.1V reading on digital voltmeter.

Adjustment Location : MONI board (See page 66.)

Power Supply Voltage Check

	Check Point	Specifications
+23V	TP3	23±1V
−8V	TP2	−8±0.5V
−5V	TP5	−5±0.5V

Check Location : MONI board (See page 66.)

TEST PATTERN FOR ADJUSTMENTS

The following adjustments are performed using the gray scale of the test patterns built in CD-ROM.

Setting :

1. Turn power on the monitor.
2. Insert the map disc to CD-ROM.
3. Set to the menu indication by pressing MENU key.
4. Select "OPTION" with cursor and press ENTER key.
5. Select "TRACKS" with cursor and press ENTER key.
6. Press the following keys in order.
   WP → WP → INFO+ → WP
7. Press the NAV key.
8. Then the test pattern (Color bar) is displayed.
9. Change the picture by moving cursor up and down or right and left and make it to the gray scale.

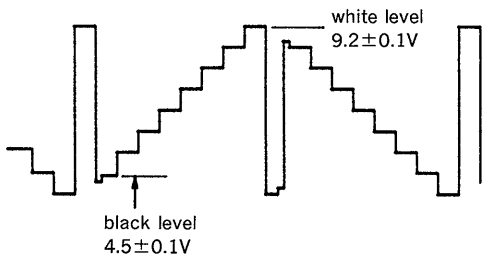
Releasing Procedure :

Press ENTER key in the condition the gray scale is displayed.
The picture returns to the map.

WHITE BALANCE ADJUSTMENT

Procedure :

1. Set BRT control (RV306) to center click.
2. Connect an oscilloscope between Pin ⑫ of CN4 and GND.
3. Adjust the black level with RV304 to 4.5±0.1V. (G SUB BIAS)
4. Adjust the white level with RV301 to 9.2±0.1V. (G GAIN)
5. Connect an oscilloscope between Pin ⑩ of CN4 and GND.
6. Adjust the black level with RV303 to 4.5±0.1V. (R SUB BIAS)
7. Adjust the white level with RV300 to 9.2±0.1V. (R GAIN)
8. Connect an oscilloscope between Pin ⑭ of CN4 and GND.
9. Adjust the black level with RV305 to 4.5±0.1V. (B SUB BIAS)
10. Adjust the white level with RV302 to 9.2±0.1V. (B GAIN)

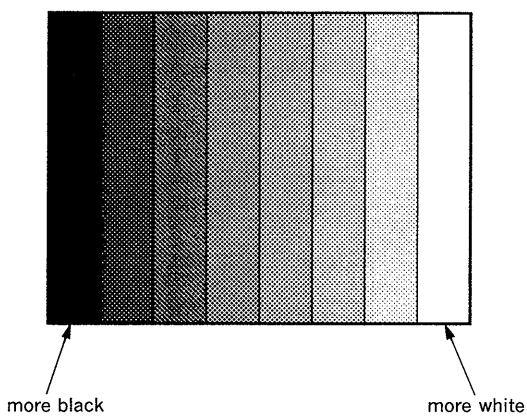


Adjustment Location : MONI board (See page 66.)

COMMON BIAS ADJUSTMENT

Procedure :

Adjust with RV310 so that the contrast goes highest.

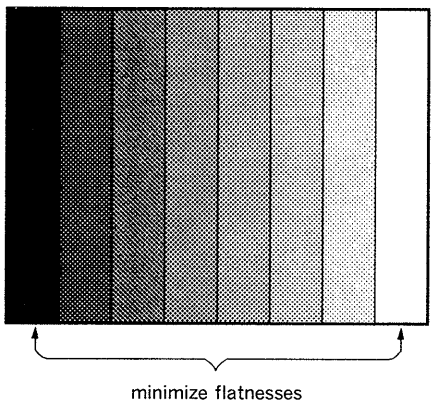


Adjustment Location : MONI board (See page 66.)

BRT ADJUSTMENT

Procedure :

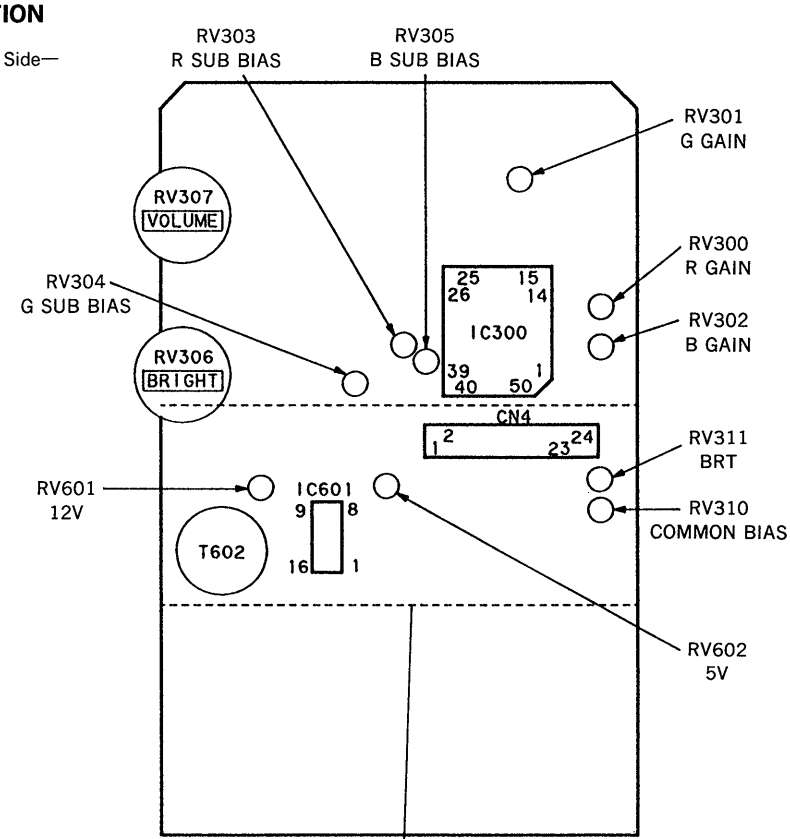
1. Set BRT control (RV306) to center click.
2. Adjust with RV311 to minimize flatnesses on the sides black and white.



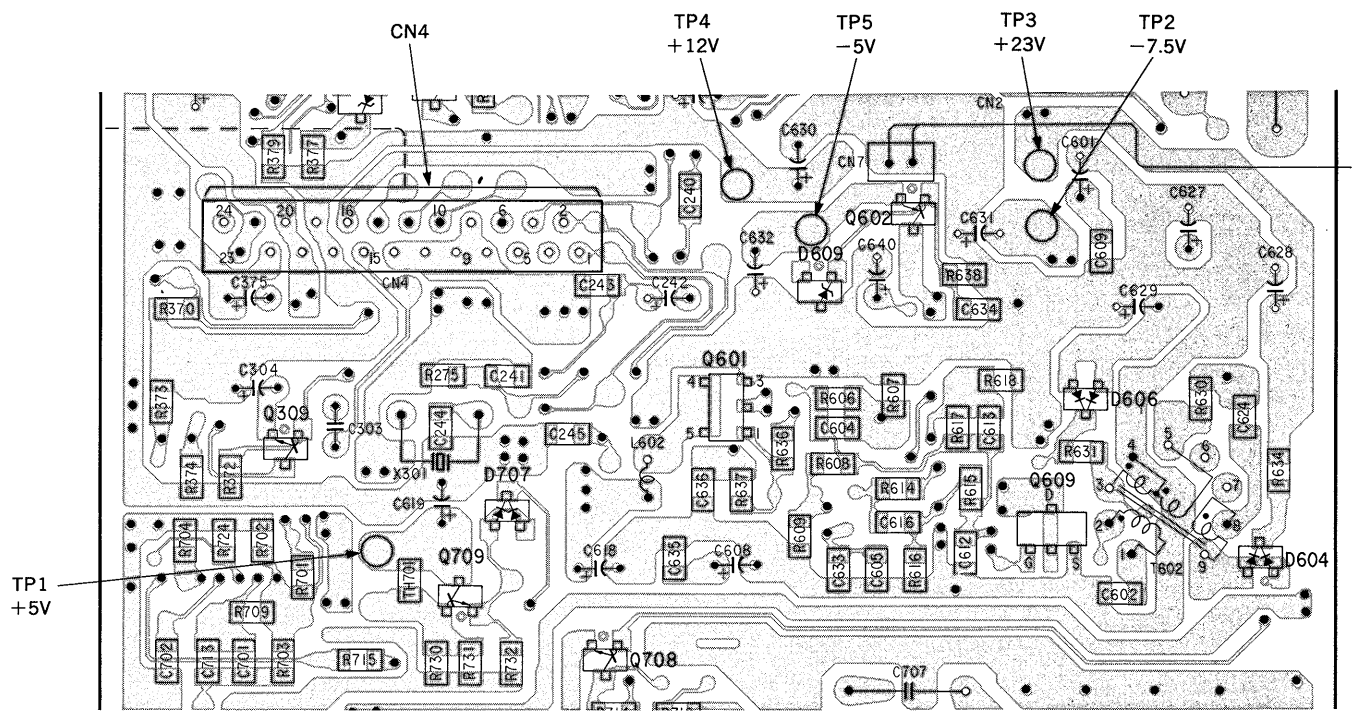
Adjustment Location : MONI board (See page 66.)

ADJUSTMENT LOCATION

MONI Board—Component Side—



—Conductor Side—



7. IC PIN DESCRIPTIONS

System Control μPD75517GF-356-3B9 (Main Board IC501) Pin Description

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Pin Description</th></tr>
<tr><td>1</td><td>MOVE0</td><td>I</td><td>Move sensor A/D converter input pin</td></tr>
<tr><td>2</td><td>AVREF</td><td>—</td><td>A/D converter reference voltage</td></tr>
<tr><td>3</td><td>VDD</td><td>—</td><td>Power (+5V)</td></tr>
<tr><td>4</td><td>VDD</td><td>—</td><td>Power (+5V)</td></tr>
<tr><td>5</td><td>$\overline{\text{GPSRST}}$</td><td>O</td><td>Cold start/hot start select pin used when resetting the GPS CPU of the antenna unit.
“L” for cold start.</td></tr>
<tr><td>6</td><td>PWLED</td><td>O</td><td>POWER LED indicator (D601) control pin</td></tr>
<tr><td>7</td><td>LMEJ</td><td>O</td><td rowspan="2">Loading motor control pin.
Set LME “H” to eject a disc. Set LML “H” to load a disc.</td></tr>
<tr><td>8</td><td>LMLO</td><td>O</td></tr>
<tr><td>9</td><td>P103</td><td>—</td><td>Not used.</td></tr>
<tr><td>10</td><td>P102</td><td>—</td><td>Not used.</td></tr>
<tr><td>11</td><td>P101</td><td>—</td><td>Not used.</td></tr>
<tr><td>12</td><td>P100</td><td>—</td><td>Not used.</td></tr>
<tr><td>13</td><td>P93</td><td>—</td><td>Not used.</td></tr>
<tr><td>14</td><td>MOVING</td><td>O</td><td>Move sensor status output pin. “H” for moving state.</td></tr>
<tr><td>15</td><td>DSPA</td><td>O</td><td>DSP (CXD2703Q)/CD audio output select pin. “H” for DSP and “L” for CD.</td></tr>
<tr><td>16</td><td>EMPH</td><td>O</td><td>Emphasis control pin.
This provides “H” output for playback of a pre-emphasized disc.</td></tr>
<tr><td>17</td><td>SUBQ</td><td>I</td><td>Q data input pin.</td></tr>
<tr><td>18</td><td>P82</td><td>—</td><td>Not used.</td></tr>
<tr><td>19</td><td>SQCK</td><td>O</td><td>SUB Q signal read clock output pin</td></tr>
<tr><td>20</td><td>GFS</td><td>I</td><td>Guard frame sync input pin. “H” signal is input when data is normally read.</td></tr>
<tr><td>21</td><td>$\overline{\text{LDON}}$</td><td>O</td><td>Laser power control pin. “L” signal is output to turn laser ON.</td></tr>
<tr><td>22</td><td>$\overline{\text{CDXLT}}$</td><td>O</td><td>Serial data latch signal output to CD servo IC.</td></tr>
<tr><td>23</td><td>$\overline{\text{CDXRST}}$</td><td>O</td><td>Reset signal output to CD servo IC.</td></tr>
<tr><td>24</td><td>SCLK</td><td>O</td><td>Output of clock for SENS data input.</td></tr>
<tr><td>25</td><td>FOK</td><td>I</td><td>Focus OK signal input pin</td></tr>
<tr><td>26</td><td>DACMUTE</td><td>O</td><td>MUTE output to D/A converter (IC302). “H” for MUTE.</td></tr>
<tr><td>27</td><td>VMUTE</td><td>O</td><td>Visual muting control pin. “H” for MUTE.</td></tr>
<tr><td>28</td><td>AMUTE</td><td>O</td><td>Audio muting control pin. “H” for MUTE.</td></tr>
<tr><td>29</td><td>DEBUG</td><td>I</td><td>Debug mode setting pin. This input is fixed to “L” signal in this set.</td></tr>
<tr><td>30</td><td>$\overline{\text{MOVSEL}}$</td><td>I</td><td>Move sensor select pin. “L” with moving sensor function incorporated.</td></tr>
<tr><td>31</td><td>SNSSEL</td><td>I</td><td>Autonomous sensor move/stop setect function select pin.
“H” with move/stop detect function incorporated (this set does not have the function).</td></tr>
<tr><td>32</td><td>DUBSEL</td><td>I</td><td>CD ROM high speed playback function select pin. “H” with high speed playback function incorporated (this set does not have the function).</td></tr>
<tr><td>33</td><td>VSS</td><td>—</td><td>GND</td></tr>
<tr><td>34</td><td>$\overline{\text{TEST2}}$</td><td>I</td><td>Test mode 2 setting pin</td></tr>
<tr><td>35</td><td>$\overline{\text{TEST1}}$</td><td>I</td><td>Test mode 1 setting pin</td></tr>
<tr><td>36</td><td>MVSEL1</td><td>I</td><td rowspan="2">Move sensor parameter value select pin
<table>
<tr><th>MVSEL1</th><th>MVSEL0</th><th>Parameter</th></tr>
<tr><td>L</td><td>L</td><td>Standard level</td></tr>
<tr><td>L</td><td>H</td><td>−4dB</td></tr>
<tr><td>H</td><td>L</td><td>−6dB</td></tr>
<tr><td>H</td><td>H</td><td>+4dB</td></tr>
</table>
(This set has the standard level.)</td></tr>
<tr><td>37</td><td>MVSEL0</td><td>I</td></tr>
</table>

Pin No.	Pin Name	I/O	Pin Description
38	DIMMER	O	Monitor dimmer control pin. "H" for DIMMER ON (dark). "L" for DIMMER OFF (bright).
39	DISPPW	O	Monitor display power control pin
40	SYSPW	O	DC/DC converter (DD401) power control pin. "H" for Power ON and "L" for Power OFF.
41	$\overline{\text{NVRST}}$	O	Reset signal output to navigation system.
42	$\overline{\text{AUXV}}$	O	Navigation system/external monitor input select pin. "H" for external input.
43	AUXA	O	Navigation system/external audio input select pin. "H" for external input.
44	MSTAT	O	Serial data and serial clock output to CXD2928Q (IC702).
45	BEEP	O	Key acknowledge BEEP sound output pin
46	P13	—	Not used.
47	MDATA	I	Serial data and serial clock input from CXD2928Q (IC702).
48	SCOR	I	SUB Q synchronizing signal input pin.
49	SIRCS	I	SIRCS (Standard Code for Infrared Remote Control System) signal input pin
50	SENS	I	SENS input from CD servo IC.
51	CDDATA	O	Serial data output to CD servo IC.
52	CDCLK	O	Serial data transfer clock output to CD servo IC.
53	BUCHK	I	Power voltage detect pin
54	VSS	—	GND
55	XT1	I	Not used.
56	XT2	O	Not used.
57	IC	—	GND
58	X1	I	System clock (4MHz)
59	X2	O	System clock (4MHz)
60	$\overline{\text{RESET}}$	I	Reset signal input
61	TOUT2	O	Test mode output 2
62	TOUT1	O	Test mode output 1
63	TOUT0	O	Test mode output 3
64	TERR	O	Test mode error output
65	305SEL	I	Mechanism deck type select pin. This input is fixed to "L" signal in this set.
66	8CMSEL	O	8cm disc mechanism deck select pin. This output is fixed to "L" signal in this set.
67	$\overline{\text{SIDBRK}}$	I	Car side brake detect pin (Not used in this set.)
68	$\overline{\text{ACCCHK}}$	I	Accessory power detect pin. "L" for ACC ON and "H" for ACC OFF.
69	$\overline{\text{EJSW}}$	I	EJECT switch (SW602) input pin
70	$\overline{\text{PWSW}}$	I	POWER switch (monitor) input pin
71	INSW	—	Disc IN switch input pin. "H" when disc is present.
72	DSW	—	Disc down switch input pin. "L" for disc down.
73	AVSS	—	GND
74	PH4IN	I	Disc sensor input pin (Not used.)
75	PH3IN	I	Disc sensor input pin (Not used.)
76	PH2IN	I	Disc sensor input pin. "H" for Disc IN.
77	PH1IN	I	Disc sensor input pin. "H" for Disc ON.
78	TEMPH	I	High temperature detect pin (A/D input)
79	TEMPL	I	Low temperature detect pin (A/D input)
80	MOVE1	I	Move sensor A/D converter input pin

CPU MC68HC000FC16 (Main Board IC701) Pin Description

Pin No.	Pin Name	I/O	Pin Description
1	D4	I/O	Data input/output (D4) for CPU data bus line.
2	D3	I/O	Data input/output (D3) for CPU data bus line.
3	D2	I/O	Data input/output (D2) for CPU data bus line.
4	D1	I/O	Data input/output (D1) for CPU data bus line.
5	D0	I/O	Data input/output (D0) for CPU data bus line.
6	AS	I	Address strobe input for CPU data bus line.
7	UDS	I	Upper byte data strobe input for CPU data bus line.
8	LDS	I	Lower byte data strobe input for CPU data bus line.
9	RW	I	Read/write select input for CPU data bus line.
10	DTACK	O	Data acknowledge output for CPU data bus line.
11	BG	O	Bus grant output for CPU bus data line.
12	BGACK	I	Bus grant acknowledge input for CPU data bus line.
13	BR	I	Bus request input for CPU bus data line.
14	VCC	—	Power (+5V)
15	CLK	I	Clock input from CD ROM AV control (IC702 CXD2928Q).
16	GND	—	GND
17	GND	—	GND
18	NC	—	Normally closed empty pin.
19	HALT	I	System reset signal input.
20	RESET	I	System reset signal input. "L" for reset.
21	VMA	—	Not used.
22	E	—	Not used.
23	VPA	—	Fixed to "H" level in this set.
24	BERR	—	Fixed to "H" level in this set.
25	IPL2	—	Fixed to "H" level in this set.
26	IPL1	I	Interrupt Request input from CD ROM control (IC702 CXD2928Q). ("L" when requested and "H" when not requested.)
27	IPL0	—	Fixed to "H" level in this set.
28	FC2	—	Not used.
29	FC1	—	Not used.
30	FC0	—	Not used.
31	NC	—	Normally closed empty pin.
32	A1	O	Address Output (A1) for CPU address bus line.
33	A2	O	Address Output (A2) for CPU address bus line.
34	A3	O	Address Output (A3) for CPU address bus line.
35	A4	O	Address Output (A4) for CPU address bus line.
36	A5	O	Address Output (A5) for CPU address bus line.
37	A6	O	Address Output (A6) for CPU address bus line.
38	A7	O	Address Output (A7) for CPU address bus line.
39	A8	O	Address Output (A8) for CPU address bus line.
40	A9	O	Address Output (A9) for CPU address bus line.
41	A10	O	Address Output (A10) for CPU address bus line.
42	A11	O	Address Output (A11) for CPU address bus line.
43	A12	O	Address Output (A12) for CPU address bus line.
44	A13	O	Address Output (A13) for CPU address bus line.
45	A14	O	Address Output (A14) for CPU address bus line.
46	A15	O	Address Output (A15) for CPU address bus line.
47	A16	O	Address Output (A16) for CPU address bus line.

Pin No.	Pin Name	I/O	Pin Description
48	A17	O	Address Output (A17) for CPU address bus line.
49	A18	O	Address Output (A18) for CPU address bus line.
50	A19	O	Address Output (A19) for CPU address bus line.
51	A20	O	Address Output (A20) for CPU address bus line.
52	VCC	—	Power (+5V)
53	A21	O	Address Output (A21) for CPU address bus line.
54	A22	O	Address Output (A22) for CPU address bus line.
55	A23	O	Address Output (A23) for CPU address bus line.
56	GND	—	GND
57	GND	—	GND
58	D15	I/O	Data Input/Output (D15) for CPU data bus line.
59	D14	I/O	Data Input/Output (D14) for CPU data bus line.
60	D13	I/O	Data Input/Output (D13) for CPU data bus line.
61	D12	I/O	Data Input/Output (D12) for CPU data bus line.
62	D11	I/O	Data Input/Output (D11) for CPU data bus line.
63	D10	I/O	Data Input/Output (D10) for CPU data bus line.
64	D9	I/O	Data Input/Output (D9) for CPU data bus line.
65	D8	I/O	Data Input/Output (D8) for CPU data bus line.
66	D7	I/O	Data Input/Output (D7) for CPU data bus line.
67	D6	I/O	Data Input/Output (D6) for CPU data bus line.
68	D5	I/O	Data Input/Output (D5) for CPU data bus line.

CD ROM AV Control CXD2928Q (Main Board IC702) Pin Description

Pin No.	Pin Name	I/O	Pin Description
1	VSS	—	GND
2	GCK	O	Video clock output (14.318MHz).
3	EXT	I	External superimpose input enable signal (negative logic)
4	ADC	O	A/D conversion clock
5	VTS	I	Test pin (GND)
6	XOT	O	Crystal oscillator output (14.318MHz)
7	XIN	I	Crystal oscillator input (14.318MHz)
8	S15	I	Picture data input (MSB)
9	S14	I	Picture data input
10	S13	I	Picture data input
11	S12	I	Picture data input
12	S11	I	Picture data input
13	S10	I	Picture data input
14	S09	I	Picture data input
15	S08	I	Picture data input
16	S07	I	Picture data input
17	S06	I	Picture data input
18	S05	I	Picture data input
19	S04	I	Picture data input
20	VDD	—	Power (+5V)
21	S03	I	Picture data input
22	S02	I	Picture data input
23	S01	I	Picture data input
24	S00	I	Picture data input (LSB)
25	SC0	O	Serial clock output for VRAM.
26	SE2	O	Serial port enable output for VRAM.
27	SE1	O	Serial port enable output for VRAM.
28	PBDT	O	DT/OE output for VRAM.
29	PBWB	O	WE output for VRAM.
30	PBR3	O	RAS output for VRAM. (Used for D0 to D3 chips.)
31	PBR2	O	RAS output for VRAM. (Used for D4 to D7 chips.)
32	PBR1	O	RAS output for VRAM. (Used for D8 to D11 chips.)
33	PBR0	O	RAS output for VRAM. (Used for D12 to D15 chips.)
34	PRA8	O	Address Output (A8) for VRAM.
35	PRA7	O	Address Output (A7) for VRAM.
36	PRA6	O	Address Output (A6) for VRAM.
37	PRA5	O	Address Output (A5) for VRAM.
38	PRA4	O	Address Output (A4) for VRAM.
39	PRA3	O	Address Output (A3) for VRAM.
40	VDD	—	Power (+5V)
41	VSS	—	GND
42	PRA2	O	Address Output (A2) for VRAM.
43	PRA1	O	Address Output (A1) for VRAM.
44	PRA0	O	Address Output (A0) for VRAM.
45	PBC3	O	CAS output for VRAM. (Used for chips allocated to lower 512K bytes of D0 to D7.)
46	PBC2	O	CAS output for VRAM. (Used for chips allocated to lower 512K bytes of D8 to D15.)
47	PBC1	O	CAS output for VRAM (Used for chips allocated to upper 512K bytes of D0 to D7.)
48	PBC0	O	CAS output for VRAM (Used for chips allocated to upper 512K bytes of D8 to D15)

Pin No.	Pin Name	I/O	Pin Description
49	PXAE	O	E00000 Address Decode output. (/AS causes gated DTACK to be automatically generated.)
50	PXAD	O	D00000 Address Decode output. (/AS causes gated DTACK to be automatically generated.) Not used in this set.
51	PXAC	O	C00000 address decode output. (/AS causes gated DTACK to be automatically generated.) Not used in this set.
52	VSS	—	GND
53	PCSX	O	Empty area chip select is signal (1FFFFF-AFFFFF). (/AS does not generate gated DTACK.)
54	PXRO	O	Boot ROM chip select signal. (To have 00000-000006 or F00000-FFFFFF DTACK automatically generated.)
55	VSS	—	GND
56	PA1	I/O	Address input/output (A1) for CPU BUS.
57	PA2	I/O	Address input/output (A2) for CPU BUS.
58	PA3	I/O	Address input/output (A3) for CPU BUS.
59	VSS	—	GND
60	PA4	I/O	Address input/output (A4) for CPU BUS.
61	PA5	I/O	Address input/output (A5) for CPU BUS.
62	PA6	I/O	Address input/output (A6) for CPU BUS.
63	PA7	I/O	Address input/output (A7) for CPU BUS.
64	PA8	I/O	Address input/output (A8) for CPU BUS.
65	PA9	I/O	Address input/output (A9) for CPU BUS.
66	PA10	I/O	Address input/output (A10) for CPU BUS.
67	PA11	I/O	Address input/output (A11) for CPU BUS.
68	PA12	I/O	Address input/output (A12) for CPU BUS.
69	PA13	I/O	Address input/output (A13) for CPU BUS.
70	PA14	I/O	Address input/output (A14) for CPU BUS.
71	PA15	I/O	Address input/output (A15) for CPU BUS.
72	PA16	I/O	Address input/output (A16) for CPU BUS.
73	PA17	I/O	Address input/output (A17) for CPU BUS.
74	PA18	I/O	Address input/output (A18) for CPU BUS.
75	PA19	I/O	Address input/output (A19) for CPU BUS.
76	PA20	I/O	Address input/output (A20) for CPU BUS.
77	PA21	I/O	Address input/output (A21) for CPU BUS.
78	PA22	I/O	Address input/output (A22) for CPU BUS.
79	PA23	I/O	Address input/output (A23) for CPU BUS.
80	VDD	—	Power (+5V)
81	VSS	—	GND
82	PD15	I/O	CPU BUS data input/output (D15).
83	PD14	I/O	CPU BUS data input/output (D14).
84	PD13	I/O	CPU BUS data input/output (D13).
85	PD12	I/O	CPU BUS data input/output (D12).
86	PD11	I/O	CPU BUS data input/output (D11).
87	PD10	I/O	CPU BUS data input/output (D10).
88	PD9	I/O	CPU BUS data input/output (D9).
89	PD8	I/O	CPU BUS data input/output (D8).
90	PD7	I/O	CPU BUS data input/output (D7).
91	PD6	I/O	CPU BUS data input/output (D6).
92	PD5	I/O	CPU BUS data input/output (D5).
93	PD4	I/O	CPU BUS data input/output (D4).

Pin No.	Pin Name	I/O	Pin Description
94	PD3	I/O	CPU BUS data input/output (D3).
95	PD2	I/O	CPU BUS data input/output (D2).
96	PD1	I/O	CPU BUS data input/output (D1).
97	PD0	I/O	CPU BUS data input/output (D0).
98	PXNB	O	B00000 address decode output. (/AS causes DTACK to be automatically generated without gating.)
99	PXAS	I/O	Address strobe input/output for CPU BUS.
100	PXUS	I/O	Upper byte data strobe input/output foqr CPU BUS.
101	PXLS	I/O	Lower byte data strobe input/output for CPU BUS.
102	PRW	I/O	Read/write input/output for CPU BUS.
103	PXDK	I/O	Data acknowledge input/output for CPU BUS.
104	PXBG	I	BUS grant input for CPU BUS.
105	PXBK	O	Bus grant acknowledge output for CPU BUS.
106	PXBR	O	Bus request output for CPU BUS.
107	PXIR	O	Interrupt request output to CPU. ("L" to request and at "high impedance" level not to request.)
108	PXRS	I	Reset input ("L" for RESET.)
109	VSS	—	GND
110	PIO0	I/O	General-purpose I/O port bit 0.
111	PIO1	I/O	General-purpose I/O port bit 1.
112	PIO2	I/O	General-purpose I/O port bit 2.
113	PIO3	I/O	General-purpose I/O port bit 3.
114	PXRA	I	CXD2703Q (Sound Chip) request input. ("L" when request is present.)
115	PINH	I	External clock input inhibit ("L" for inhibit [internal oscillation] .)
116	PCCK	O	CPU clock output. (=1/2MCK)
117	PMCK	O	Master clock output. Not used in this set.
118	TEST1	I	Test pin 1
119	TEST0	I	Test pin 2
120	VDD	—	Power (+5V)
121	VSS	—	GND
122	XOT2	O	Master clock oscillation crystal connecting pin. (20MHz)
123	XIN2	I	Master clock oscillation crystal connecting pin. (20MHz)
124	PTXD	O	ACIA CH1 data output
125	PRXD	I	ACIA CH1 data input
126	PMDT	O	Command output to CD-ROM drive.
127	PMST	I	Status input from CD-ROM drive.
128	PC2P	I	C2 flag input from CD-ROM drive.
129	PDAT	I	Data input from CD-ROM drive.
130	PLCK	I	Data LR CLOCK input from CD-ROM drive.
131	PBCK	I	Data BIT CLOCK input from CD-ROM drive.
132	PTX2	O	ACIA CH2 Data output
133	PRX2	I	ACIA CH2 Data input
134	PTX3	O	ACIA CH3 Data output
135	PRX3	I	ACIA CH3 Data input
136	PSIN	I	External composite sync input. Fixed to "L" level in this set.
137	PCSC	O	Composite sync output
138	PHSC	O	H SYNC signal output. Not used in this set.
139	PHBK	O	H BLANK signal output. Not used in this set.
140	PVSC	O	V BLANK signal output. Not used in this set.

Pin No.	Pin Name	I/O	Pin Description
141	PVBK	O	V BLANK signal. Not used in this set.
142	PIO4	I/O	General-purpose I/O port bit 4. Not used in this set.
143	PIO5	I/O	Geseral-purpose I/O port bit 5. Not used is this set.
144	PIO6	I/O	General-purpose I/O port bit 6
145	PIO7	I/O	General-purpose I/O port bit 7
146	PIO8	I/O	General-purpose I/O port bit 8
147	PIO9	I/O	General-purpose I/O port bit 9
148	PIOA	I/O	General-purpose I/O port bit A
149	AVSS	—	Analog GND
150	PIOB	I/O	General-purpose I/O port bit B. Not used in this set.
151	MUTE	I	Video signal mute ("H" for OUT=0V and PCSC=5V, and "L" for normal output.)
152	VB	I	Bias voltage generation
153	AVSS	—	Analog GND
154	VREF	—	V reference. Full scale value is set as output.
155	IREF	—	I reference
156	ROUT	O	Red current output pin.
157	GOUT	O	Green current output pin.
158	BOUT	O	Blue current output pin
159	VG	I	Current cell
160	VDD	—	Power (+5V)

Digital Signal Processor CXD2703Q (Main Board IC711) Pin Description

Pin No.	Pin Name	I/O	Pin Description
1	NC	—	Empty pin
2	VSS	—	GND
3	NC	—	Empty pin
4	NC	—	Empty pin
5	NC	—	Empty pin
6	NC	—	Empty pin
7	NC	—	Empty pin
8	NC	—	Empty pin
9	NC	—	Empty pin
10	OVF	O	Accumulator overflow display output. Not used in this set.
11	DIV	I	SCK dividing ratio select for LRCK/BCK. "H" for SCK=518×LRCK and "L" for SCK=209×LRCK. BCK is fixed to 64×LRCK. This input is fixed to "L" level in this set.
12	VSS	—	GND
13	SEL	I	External input/internal generation select for LRCK/BCK. "H" for internal generation and "H" for external input. Fixed to "L" level in this set.
14	LRCK	O	LRCK monitor output pin. Not used in this set.
15	WCK	O	WCK monitor output pin. Not used in this set.
16	BCK	O	BCK monitor output pin. Not used in this set.
17	ELR	I	External LRCK input pin
18	NC	—	Empty pin
19	EBC	I	External BCK input pin
20	SOUT	O	Serial audio data output pin
21	SIN	I	Serial audio data input pin
22	SCK	I	Input of master clock used for audio interface when LRCK/BCK is internally generated. Not used in this set.
23	VSS	—	GND
24	CK2	O	Master clock dividing output XTAI=4×CK2. Not used in this set.
25	CK1	O	Master clock dividing output XTAI=2×CK1. Not used in this set.
26	PXRA	O	FIFO register write/read (FIFO REQUEST) signal
27	XEBC	I	External BCK inverted input pin. Not used in this set.
28	PCS1	I	Chip select input pin. PSC1="L" and PCSX="L" to select CXD2703Q. Fixed to "L" level in this set.
29	PCSX	I	Chip select input pin. PSC1="L" and PCSX="L" to select CXD2703Q.
30	XTAO	O	Master clock output pin (50MHz)
31	XTAI	I	Master clock input pin (50MHz)
32	VSS	—	GND
33	VDD	—	Power (+5V)
34	ACK	—	Test pin. Not used in this set.
35	PA1	I	Address input pin (A1)
36	PA2	I	Address input pin (A2)
37	PXDK	O	Data acknowledge output for CPU BUS.
38	PRW	I	Read/write input for CPU BUS.
39	PXLS	I	Upper byte data strobe input for CPU BUS.
40	PXUS	I	Lower byte data strobe input for CPU BUS.
41	NC	—	Empty pin
42	VSS	—	GND
43	PD15	I/O	Data input/output (D15) for CPU BUS.
44	PD14	I/O	Data input/output (D14) for CPU BUS.

Pin No.	Pin Name	I/O	Pin Description
45	PD13	I/O	Data input/output (D13) for CPU BUS.
46	PD12	I/O	Data input/output (D12) for CPU BUS.
47	PD11	I/O	Data input/output (D11) for CPU BUS.
48	PD10	I/O	Data input/output (D10) for CPU BUS.
49	PD9	I/O	Data input/output (D9) for CPU BUS.
50	PD8	I/O	Data input/output (D8) for CPU BUS.
51	PD7	I/O	Data input/output (D7) for CPU BUS.
52	VSS	—	GND
53	PD6	I/O	Data input/output (D6) for CPU BUS.
54	PD5	I/O	Data input/output (D5) for CPU BUS.
55	PD4	I/O	Data input/output (D4) for CPU BUS.
56	PD3	I/O	Data input/output (D3) for CPU BUS.
57	PD2	I/O	Data input/output (D2) for CPU BUS.
58	PD1	I/O	Data input/output (D1) for CPU BUS.
59	PD0	I/O	Data input/output (D0) for CPU BUS.
60	TRF	—	Test pin. Not used in this set.
61	RTST	—	Test pin. Not used in this set.
62	NC	—	Empty pin
63	VSS	—	GND
64	PXRS	I	Reset input ("L" for RESET)
65	TST2	—	Test pin. Not used in this set.
66	TST1	—	Test pin. Not used in this set.
67	TST0	—	Test pin. Not used in this set.
68	NC	—	Empty pin
69	NC	—	Empty pin
70	NC	—	Empty pin
71	NC	—	Empty pin
72	VSS	—	GND
73	VDD	—	Power (+5V)
74	NC	—	Empty pin
75	NC	—	Empty pin
76	NC	—	Empty pin
77	NC	—	Empty pin
78	NC	—	Empty pin
79	NC	—	Empty pin
80	NC	—	Empty pin

GPS Microcomputer HD6435368SW01F (Main Board IC801) Pin Description (US Model)
GPS Microcomputer HD6475368SF16-SJ7183 (Main Board IC801) Pin Description (French Model)

Pin No.	Pin Name	I/O	Pin Description
1	R/$\overline{W}$	—	Not used.
2	$\overline{DS}$	—	Not used.
3	$\overline{RD}$	O	"L" for Read : CPU is reading the external address.
4	$\overline{WR}$	O	"L" for Write : CPU is writing the external address.
5	VCC	—	Power (+5V)
6	MODE0	I	Operation mode determination pin
7	MODE1	I	
8	MODE2	I	
9	$\overline{STBY}$	I	Standby. Fixed to "H" level.
10	$\overline{RES}$	I	Reset. RESET is activated when this input changes from "L" to "H" level.
11	NM1	I	Nonmaskable interrupt. Fixed to "H" level.
12	VSS	—	GND
13	D0	I/O	Data bus (8 bits).
14	D1	I/O	
15	D2	I/O	
16	D3	I/O	
17	D4	I/O	
18	D5	I/O	
19	D6	I/O	
20	D7	I/O	
21	A0	O	Address bus (lower 8 bites).
22	A1	O	
23	A2	O	
24	A3	O	
25	A4	O	
26	A5	O	
27	A6	O	
28	A7	O	
29	VSS	—	GND
30	A8	O	Address bus (upper 8 bits).
31	A9	O	
32	A10	O	
33	A11	O	
34	A12	O	
35	A13	O	
36	A14	O	
37	A15	O	
38	A16	O	Page address output pin
39	P61	I/O	Not used.
40	P62	I/O	Not used.
41	P63	I/O	Not used.
42	VCC	—	Power (+5V)
43	LAT	O	PLL data latch signal
44	DATA	O	PLL data
45	CLK	O	PLL data clock
46	LOCK	I	PLL lock signal. "H" for lock and "L" for unlock.
47	P74	—	Not used.
48	P75	—	Not used.

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Pin Description</th></tr>
<tr><td>49</td><td>P76</td><td>—</td><td>Not used.</td></tr>
<tr><td>50</td><td>P77</td><td>—</td><td>Not used.</td></tr>
<tr><td>51</td><td>AVSS</td><td>—</td><td>GND</td></tr>
<tr><td>52</td><td>PLL0</td><td>I</td><td>PLL setting value for PF. Fixed to “L” level.</td></tr>
<tr><td>53</td><td>PLL1</td><td>I</td><td>PLL setting value for PF. Fixed to “L” level.</td></tr>
<tr><td>54</td><td>PLL2</td><td>I</td><td>PLL setting value for PF. Fixed to “L” level.</td></tr>
<tr><td>55</td><td>BS0</td><td>I</td><td rowspan="2">Communication baud rate setting
<table><tr><th>BS0</th><th>BS1</th><th>Baud rate</th></tr><tr><td>L</td><td>L</td><td>9600</td></tr></table></td></tr>
<tr><td>56</td><td>BS1</td><td>I</td></tr>
<tr><td>57</td><td>CLR</td><td>I</td><td>System reset switch. When resetting, putting this switch “L” will initialize all the contents including the backup contens.</td></tr>
<tr><td>58</td><td>RESERVE</td><td>I</td><td>Spare. (Not used.) Fixed to “L” level in this set.</td></tr>
<tr><td>59</td><td>CTS</td><td>I</td><td>Communication control switch. “L” for communication enabled and “H” for communication disabled. Fixed to “L” level in this set.</td></tr>
<tr><td>60</td><td>AVCC</td><td>—</td><td>Power (+5V)</td></tr>
<tr><td>61</td><td>TEST1</td><td>I</td><td>Test mode 1 input pin</td></tr>
<tr><td>62</td><td>TMON0</td><td>O</td><td rowspan="3">Test mode 1 monitor pin
<table><tr><th>TMON0</th><th>TMON1</th><th>TMON2</th><th></th></tr><tr><td>L</td><td>L</td><td>L</td><td>Initial setting</td></tr><tr><td>H</td><td>L</td><td>L</td><td>ROM check</td></tr><tr><td>L</td><td>H</td><td>L</td><td>RAM check</td></tr><tr><td>H</td><td>H</td><td>L</td><td>Clock check</td></tr><tr><td>L</td><td>L</td><td>H</td><td>68K, H8 communication check</td></tr><tr><td>H</td><td>L</td><td>H</td><td>RF sensitivity check</td></tr></table></td></tr>
<tr><td>63</td><td>TMON1</td><td>O</td></tr>
<tr><td>64</td><td>TMON2</td><td>O</td></tr>
<tr><td>65</td><td>TERR</td><td>O</td><td>Test mode 1 error detect pin. “H” when error is detected.</td></tr>
<tr><td>66</td><td>TXD</td><td>O</td><td>Send data. SCI data output pin.</td></tr>
<tr><td>67</td><td>RXD</td><td>I</td><td>Receive data. SCI receive data input pin.</td></tr>
<tr><td>68</td><td>P97</td><td>—</td><td>Not used.</td></tr>
<tr><td>69</td><td>EXTAL</td><td>I</td><td>Clock (20MHz)</td></tr>
<tr><td>70</td><td>XTAL</td><td>O</td><td>Clock (20MHz)</td></tr>
<tr><td>71</td><td>VSS</td><td>—</td><td>GND</td></tr>
<tr><td>72</td><td>P10</td><td>—</td><td>Not used.</td></tr>
<tr><td>73</td><td>P11</td><td>—</td><td>Not used.</td></tr>
<tr><td>74</td><td>P12</td><td>—</td><td>Not used.</td></tr>
<tr><td>75</td><td>$\overline{\text{BREQ}}$</td><td>I</td><td>Bus permission request. Not used. (fixed to “L” level.)</td></tr>
<tr><td>76</td><td>$\overline{\text{WAIT}}$</td><td>I</td><td>Wait. When CPU accesses to the real time clock (IC803), the CPU requests to insert one state into the bus cycle.</td></tr>
<tr><td>77</td><td>$\overline{\text{IRQ0}}$</td><td>I</td><td>Interrupt request. From CXD2919R (IC802), each channel interrupts at a 1 msec cycle (one cycle of PN).</td></tr>
<tr><td>78</td><td>$\overline{\text{IRQ1}}$</td><td>I</td><td>Not used. (Fixed to “H” level)</td></tr>
<tr><td>79</td><td>P17</td><td>—</td><td>Not used.</td></tr>
<tr><td>80</td><td>$\overline{\text{AS}}$</td><td>O</td><td>Address strobe. “L” to enable address output on the address bus.</td></tr>
</table>

9-959-728-12
(including -81, -91)

Sony Corporation
Mobile Electronics Company

English
95K0475051-1
Printed in Germany
© 1995. 11
Published by Home A & V Products Div.
Quality Engineering Dept.